



**U.S. Army Corps of Engineers
Southwest Region**

FINAL

**Site Specific Work Plan Addendum
to the
Programmatic Work Plan**

**Midland Army Airfield
Midland County, Texas**

FUDS Project No. K06TX019901

October 2007

In Support of
FUDS MMRP Site Inspections Project

Prepared by:

PARSONS

**5390 Triangle Parkway, Suite 100
Norcross, Georgia 30092**

Prepared for:

**U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st E. Ave.
Tulsa, OK 74128**

and

SPD Range Support Center





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LIST OF ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
µg	micrograms
µmhos/cm ²	micromhos/square centimeter
AAF	Army Airfield
AHA	Activity hazard analysis
AOC	area of concern
ASR	Archive Search Report
bgs	below ground surface
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESPA	USACE, Albuquerque District
CESWF	USACE, Fort Worth District
CHE	chemical warfare materiel health evaluation
CHTW	Containerized/Hazardous Toxic Waste
CoC	Certificate of Clearance
CPR	Cardiopulmonary Respiration
CRREL	Cold Regions Research and Engineering Laboratory
CSEM	conceptual site exposure model
CSM	conceptual site model
CVAA	Cold Vapor Atomic Absorption
CWM	Chemical warfare materials
CZMP	Coastal Zone Management Plan
DC	Design Center
DDT	Dichloro-Diphenyl-Trichloroethane
DERP	Defense Environmental Restoration Program
DID	data item description
DNT	Dinitrotoluene
DoD	Department of Defense
DQO	data quality objective
EHE	explosive hazard evaluation
EOD	explosive ordnance disposal
EPP	environmental protection plan
ER	engineering regulation
ERDMP	Environmental Restoration Division, Directorate of Military Programs
ERFPP	Emergency Response and Fire Prevention Plan
FD	field duplicate
ft	feet
FTL	field team leader
FUDS	formerly used defense site
GPS	global positioning system

Hg	mercury
HHE	health hazard evaluation
HPLC	high performance liquid chromatography
HRS	hazard ranking system
HTRW	Hazardous, Toxic, and Radiation Waste
HTW	hazardous and toxic waste
IC	Ion chromatography
ICP	Inductively Coupled Plasma
IDW	investigation-derived waste
IGD	Interim Guidance Document
INPR	inventory project report
kg	kilograms
L	liters
MC	munitions constituent
MD	munitions debris
MDL	method detection limit
MEC	munitions and explosives of concern
mg	milligrams
ml	milliliters
mm	millimeters
MM	Military Munitions
MM CX	Military Munitions Center of Expertise
MMRP	military munitions response program
MRS	munitions response site
MRSP	munitions response site prioritization protocol
MS	Mass spectrometry
MS/MSD	matrix spike/matrix spike duplicate
MSSL	medium-specific screening level
NDAI	no DoD action indicated
NGVD	National Geodetic Datum
NHA	National Heritage Areas
NHL	National Historic Landmarks
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRHP	National Register of Historic Places
NRIS	National Register Information System
NTU	nephelometric turbidity units
NWI	National Wetlands Inventory
NWRS	National Wildlife Refuge System
OE	ordnance and explosive waste
OSD	Office of the Secretary of Defense
oz	ounces
PAH	polycyclic aromatic hydrocarbons
PAPP	programmatic accident prevention plan
PCL	protective concentration levels

PDA	personal digital assistant
PFSP	Programmatic Field Sampling Plan
POP	period of performance
PQL	practical quantitation limit
PRP	Potentially Responsible Party
PRPHTW	Potentially Responsible Party/Hazardous and Toxic Waste
PSAP	programmatic sampling and analysis plan
PWP	programmatic work plan
PWS	Performance Work Statement
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
QR	qualitative reconnaissance
RAC	risk assessment code
RAP	Response Action Plan
RBEL	risk-based exposure level
RCRA	Resource Conservation and Recovery Act
RDRA	Remedial Design Remedial Action
RI/FS	remedial investigation/feasibility study
ROE	right-of-entry
SHPO	State Historic Preservation Office
SI	site inspection
SLRA	screening level risk assessment
SS-SAP	site-specific sampling and analysis plan
SS-WP	site-specific work plan
STL	Severn Trent Laboratories
T&E	threatened and endangered
TAC	Texas Administrative Code
TBD	to be determined
TCEQ	Texas Commission on Environmental Quality
TCRA	time critical removal action
TESS	threatened and endangered species system
THC	Texas Historical Commission
TNG	Texas National Guard
TNT	Trinitrotoluene
TPP	technical project planning
TPWD	Texas Parks and Wildlife Department
TRRP	Texas Risk Reduction Program
TSWQS	Texas Surface Water Quality Standards
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UXO	unexploded ordnance
WP	white phosphorus

CHAPTER 1 INTRODUCTION

1.1 APPLICATION

1.1.1 This Site-Specific Work Plan (SS-WP) has been prepared for the *Midland Army Airfield (AAF), Midland County, Texas, Formerly Used Defense Site (FUDS) Project Number K06TX019901*. The SS-WP serves as an extension to the Programmatic Work Plan (PWP) and the Programmatic Sampling and Analysis Plan (PSAP) to conduct Site Inspections (SI) under the Military Munitions Response Program (MMRP) within the U.S. Army Corps of Engineers (USACE) Southwest and Pacific Military Munitions Design Center (MM DC) region. The reader is directed to the Final PWP (Parsons 2005) and Final PSAP (USACE 2005), including all subsequent addenda, for extensive detail regarding the majority of SI procedures and resources common to most SI field actions. The PWP and PSAP have been reviewed and approved by USACE for use during implementation of the SI program.

1.1.2 The intent of this SS-WP is to augment the PWP and PSAP, as warranted, to present pertinent site-specific information and procedural deviations that could not be readily captured in the programmatic documents or were the result of Technical Project Planning (TPP) Team agreements requiring modifications to the preliminary SI Technical Approach (see Section 1.3 below). The PWP and PSAP are intended to be umbrella documents that set overall programmatic objectives and approaches, whereas the SS-WP provides site-specific details and action plans. It should be noted that the PWP, the PSAP, and the SS-WP will accompany the field team during the SI field activities.

1.2 SITE INSPECTION PROJECT OBJECTIVE – MIDLAND AAF

1.2.1 The purpose and scope of this SI project is described in Section 1.2 of the PWP. However, the primary objective can be summarized as the determination, through reconnaissance and munitions constituent (MC) sampling, as to whether the site should be recommended for immediate action (time critical removal action [TCRA]), subsequent characterization actions (such as a remedial investigation/feasibility study [RI/FS]), or no Department of Defense (DoD) action indicated (NDAI). NDAI recommendations are limited exclusively to munitions and explosives of concern (MEC) and MC contamination issues and do not apply to other unrelated hazardous and toxic waste (HTW) concerns the site may pose. Additionally, if an NDAI recommendation is warranted and MEC and/or MC contamination issues are subsequently identified, the site would be re-opened and would start the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process over again.

1.2.2 The key to performing a successful and cost effective SI is understanding that an SI is not designed to characterize or delineate (lateral or vertical extent) potential site contamination. It is merely a site screening initiative to address whether MEC, MC,

or both are present at the site. Per Engineering Regulation (ER) 200-3-1 guidance for conducting an SI, "The SI is not intended as a full-scale study of the nature and extent of contamination or explosive hazards" and only requires collection of sufficient and appropriate information as defined in the TPP Memorandum for this site (see Appendix A).

1.2.3 Frequently, sufficient data from prior studies, such as the Inventory Project Report (INPR), Preliminary Assessment (PA), and the INPR Supplement exist to support an anticipated recommendation for the site with regard to MEC, MC, or both. In such instances, data collection is tailored toward providing compelling evidence supporting an NDAI assertion or demonstrating a strategy for focusing an RI/FS to reduce the number of munitions response sites (MRS) within the site.

1.2.4 At Midland AAF, there are three MRSs: the Skeet Range, Burial Pit No. 1, and Burial Pit No. 2. Although the presence of MEC has not been confirmed at any of the MRSs, quantities of munitions debris (MD) were identified on the ground surface at both Burial Pits during the PA site visit in 2004 (USACE 2004). The MD consisted of M38 100-lb. practice bombs. The SI for Midland AAF will attempt to further evaluate the Burial Pits to provide circumstantial supporting evidence reflective of the possible presence of MEC in these areas. Based on the existing body of data for this site, which confirms that military munitions were observed at the Burial Pits, the primary recommendation of this SI is anticipated to be for an RI/FS to be conducted. Therefore, the SI will proceed in a manner to support a focused RI/FS determination. Environmental samples will be biased to coincide with site locations most likely to display evidence of residual MC contamination.

1.2.5 No MD was observed at the Skeet Range (USACE 2004); therefore, the SI will attempt to determine if the MRS has been impacted by small arms ammunition constituents or polycyclic aromatic hydrocarbons (PAH, a common component of skeet). Based on the existing body of data for the Skeet Range MRS, the primary recommendation of this SI is anticipated to be NDAI. Therefore, the SI will collect information to support the possibility of this recommendation, including analysis for small arms ammunition indicator metals, which include antimony, copper, and lead.

1.3 TECHNICAL PROJECT PLANNING SUMMARY

1.3.1 Midland AAF falls under the purview of the USACE, Fort Worth District (CESWF). A TPP meeting was facilitated by CESWF on April 18, 2007 and included representatives of CESWF, USACE Albuquerque District (CESPA), the Texas Commission on Environmental Quality (TCEQ), the United States Environmental Protection Agency (USEPA) and Parsons. Input was solicited from the TPP Team on the Technical Approach presented in the Final TPP Memorandum issued on July 12, 2007 (Parsons 2007) (see Appendix A). This SS-WP Addendum reflects the TPP Team's decisions resulting from the meeting, as well as those directly resulting from follow-up actions. Key TPP facts and decisions are summarized below:

- The TPP Team agreed to modified sampling locations, methods, and analyses presented at the meeting, with exceptions described below. These locations were presented in the TPP Memorandum (Appendix A) and are summarized below.
- It was agreed that there would be seven surface soil samples and one groundwater sample collected at Midland AAF. Although migration of MC to a depth of ~100 feet is consider unlikely, a sample will be collected from the well because of the Ogallala Aquifer's regional importance as a water source. Samples from the Burial Pits will be analyzed for lead and explosives. Samples from the Skeet Range will be analyzed for lead, antimony, copper, and PAHs. Samples from the remaining land will be analyzed for PAHs. The groundwater sample will be analyzed for explosives, antimony, and copper. (The TPP Team had agreed that lead in groundwater would only be analyzed if the well report showed a perched aquifer near ground surface. No perched aquifer is present so lead will not be analyzed.)
- At the request of the TCEQ, up to two discretionary soil samples will be available to the SI Field Team to be collected at locations where conditions indicate possible MC contamination are present. Comments from TCEQ subsequently requested that these two discretionary soil samples be taken within the Skeet Range MRS to provide support for the anticipated NDAI recommendation.
- The TPP Team agreed that the exact soil sampling locations will be left to the professional judgment of the field team. It was agreed that they can move each sample location up to 100 feet without documenting justification for the adjustment. The sampling locations depicted on Figure 3.1 and 3.2 will serve as the point of departure to assist the field team in assessing conditions indicative of MC contamination associated with the ranges/areas (i.e., visible MEC, presence of a target) and will represent the fallback sample location in the absence of any significant field observations.
- Method 8330, which has been approved by USEPA for explosives analysis, will be used. The Cold Regions Research and Engineering Laboratory (CRREL) "Seven-Point Wheel" sampling approach will be used for collection of the samples.
- Comparison criteria for the sampling results will be the most conservative Texas Risk Reduction Program (TRRP) Tier 1 Residential Soil Protective Concentration Levels (PCL) (lowest of the soil-to-groundwater and total soil combined for a 30-acre site). In the absence of a TRRP PCL, USEPA Region 6 Residential Medium-Specific Screening Levels (MSSL) will be used. Where the practical quantitation limit (PQL) is higher than the PCL, the PQL will be used instead of the TRRP PCL, as allowed by the TRRP rule. Although the site is used for industrial purposes (airport), residential standards will be used as screening criteria in accordance with TRRP guidelines. Regional TRRP background concentrations will also be used for metals comparison.

- Based on the details currently known about the site, it is unlikely that Midland AAF will be considered an important ecological place because it is a municipal airport and contains no wetlands. No screening level ecological risk assessment (SLERA) is anticipated to be necessary. However, if new information is uncovered that a SLERA is necessary, a SLERA will be completed.

1.3.2 This SS-WP has been written to address those items mentioned above and any other site-specific concerns needing further clarification of the PWP and PSAP with regard to performing the SI at the Midland AAF.

1.4 SITE-SPECIFIC WORK PLAN ORGANIZATION

1.4.1 This SS-WP Addendum covers the investigation and all associated preparations necessary for SI activities at the Midland AAF. The reader is referred to the PWP or PSAP for the general programmatic information intentionally excluded from this document. The SS-WP Addendum is organized as follows:

- Chapter 1 – Introduction
- Chapter 2 – Project Description
- Chapter 3 – Field Investigation Plan
- Chapter 4 – Sampling and Analysis Plan
- Chapter 5 – Environmental Protection Plan
- Chapter 6 – Site-Specific Health and Safety Plan
- Chapter 7 - References
- Appendices

CHAPTER 2

PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Midland AAF is located in Midland County, about 8.5 miles southwest of Midland, Texas, accessed from U.S. Highway 20. The location and boundaries of the site are shown in Figure 2.1.

2.2 SITE DESCRIPTION

2.2.1 Previously known as Sloan Field, Midland AAF was used by the Army intermittently in the 1930s for refueling. The site was acquired and used by the U.S. Government from 1941 until 1946 by the Army Air Corps stationed at Midland AAF, and released back to the City of Midland in 1949. Records indicate that the property was under DoD control only during the lease period. The airfield portion of the site is now owned by the City of Midland and is known as Midland International Airport (USACE 2004a).

2.2.2 Midland AAF comprises approximately 1,680 acres, and included an ordnance storage facility for small arms ammunition, pyrotechnics, black powder, high explosives, and other chemical warfare materials. A gas defense instruction building was also constructed, but historical documents indicate that the only chemical training conducted onsite utilized chlorine and tear agents. A skeet range was also constructed on the base. M38A2 100-lb. practice bombs are thought to have been disposed of by burial at the Burial Pits based on the presence of numerous M38 practice bomb remnants (USACE 2004a). Although archaeological sites and endangered species habitat have not been identified at this site, general avoidance procedures are presented in Chapter 5.

2.2.3 Presented below is a summary of site-specific information taken primarily from the Midland AAF PA (USACE 2004a) and INPR Supplement (USACE 2004b). Where appropriate, the information has been revised and updated to reflect data collected during the TPP Meetings, as well as other sources.

2.2.1 Geology and Soil

2.2.1.1 The Midland AAF site is located in the southern High Plains section of the Great Plains physiographic province. Much of the surface of the high plains is the remnant of a great tertiary fluviatile plain that once extended from the front of the Rocky Mountains to beyond the present eastern border of the Great Plains. This tertiary mantle, which is the dominant feature of the High Plains section, consists of a number of formations ranging in age from Paleocene to Pliocene.

2.2.1.2 Early in geological history, about 250 million years ago, a mountain range extended from southwest to northwest across central Texas. In the northwest a shallow sea covered much of the state. This western area is known as the Permian Basin. The basin of this former sea dips downward to the west from the north central portion of Texas, with its low point in the vicinity of Midland County to the southeast of the site. The material deposited during the Permian period is too deep to influence the site soil, but vast reservoirs with storage capacity for water or oil and gas are located in these ancient beds.

2.2.1.3 The uppermost formation over much of the High Plains is the Pliocene Ogallala Formation. The Ogallala extends from the Pecos Valley northward across Texas, Oklahoma, Kansas, Nebraska, and into South Dakota. The Ogallala Formation primarily consists of sandy alluvium. Its thickness varies from a few to several hundred feet, depending on the configuration of the surface on which it was deposited. Although alluvial sand predominates, gravel, silt, lacustrine clay, and freshwater limestone are within the Ogallala beds.

2.2.1.4 The primary soil type at the Midland AAF is silt, sand, and clay calcareous sediment. Generally at Midland AAF, the surface layer is light brownish-gray calcareous silty sandy clay, about 8 inches thick. The next layer is a weakly cemented caliche, about 20 inches thick. Next, to a depth of about 64 inches, there is a pink, massive silty sandy clay that is about 12 percent calcium carbonate. There are also small areas of exposed bedrock and gravel pits at Midland AAF.

2.2.2 Climate

2.2.2.1 The climate of the site is typical of a semi-arid region. Most of the annual precipitation within the area comes as a result of very violent spring and early summer thunderstorms. These are usually accompanied by excessive rainfall over limited areas, and sometimes by hail. The maximum rainfall recorded in a 24-hour period was 4.75 inches in May 1968. Snow is infrequent. Tornadoes are occasionally sighted.

2.2.2.2 During the late winter and early spring months, blowing dust occurs frequently. The flat plains of the area, with only grass as vegetation, offer little resistance to the strong winds. The sky is occasionally obscured by dust, but during most storms visibilities range from 1 to 3 miles. In May 1977, winds reached a maximum gust of 72 knots from the northwest.

2.2.2.3 Daytime temperatures are quite hot during the summer, but there is a large diurnal range of temperature, and most nights are comfortable. The temperature drops below 32 degrees Fahrenheit (°F) during the fall about mid-November, and the last temperature below 32°F during spring comes early in April. The extreme maximum and minimum temperatures on record are 116°F, recorded in June 1994, and -11°F, recorded in February 1985, respectively.

2.2.2.4 Winters are characterized by frequent cold periods followed by rapid warming. Cold frontal passages are followed by chilly weather for 2 or 3 days. Summers are hot and dry, with numerous small convective showers. The prevailing wind direction within this area is from the southeast. This fact, together with the upslope of the terrain from the same direction, causes occasional low cloudiness and drizzle during winter and spring months. As a result of the cooling effect of the upslope winds, maximum temperatures during the summer months frequently are from 2 to 6 degrees cooler than those at places 100 miles to the southeast.

2.2.3 Topography and Vegetation

2.2.3.1 The change in elevation throughout the Midland area is less than 150 feet. The majority of Midland AAF lies on a relatively level surface; maximum relief of the site is 25 feet from the northern boundary to the southern boundary. Elevation at the site is approximately 2,850 feet above mean sea level (msl).

2.2.3.2 The High Plains is characterized by smooth to slightly irregular plains with a high percentage of cropland. Vegetation in this area is limited. It consists mostly of native grasses like Grama-buffalograss and few trees which are mostly of the mesquite variety. Oil and gas production dominates the area (Griffith 2004).

2.2.4 Hydrology

2.2.4.1 The Ogallala formation is the principal source of groundwater underlying the Midland AAF site and the southern High Plains. Rocks of Quaternary age and underlying rocks of Cretaceous and Triassic age generally yield only small amounts of water. The Ogallala formation and the sand, alluvium, and soil of recent and Pleistocene ages form a single hydrologic unit.

2.2.4.2 Groundwater occurs in the unconsolidated sand and gravel of the Ogallala formation beneath the caliche caprock. The water-bearing properties of the formation vary vertically and horizontally. The vertical variation is due to the amount of calcium carbonate cement in the Ogallala formation. As a rule the amount of calcium carbonate decreases downward and is practically negligible at depths greater than 35 feet below the surface. Lateral variations in the water-bearing properties of the sand and gravel below the zones of cementation are the result of variations in the coarseness and degree of sorting the particles.

2.2.4.3 The depth to water at the site is between 150 to 300 feet below ground surface. Wells in the area yield between 300 and 1,500 gallons per minute (gpm). The water has the potential to be used for irrigation, industrial, and domestic purposes. It is unknown if the site has groundwater contamination from the residue of munitions.

2.2.4.4 Numerous small sinkholes/depressions are scattered across the site, and the area is subject to flooding in very wet seasons. No U.S. Geological Survey (USGS) stream gaging stations exist near this site.

2.3 GENERAL HISTORY

2.3.1 In January 1928, the first Army flight landed at Sloan Field, which refueled and serviced bombers. Around April 6, 1930, Sloan Field became an Airways Station leased to the U.S. Government. In 1935, part of Sloan Field was sold to the City of Midland, which allowed personnel from the Civil Aeronautics Authority to maintain teletype connections and the Air Corps to provide local weather service. In June 1940, the U.S. Government announced that the Midland Municipal Airport was an important site under the National Defense Program. Improvements were made to the airfield, including extension of the runways (USACE 2004a).

2.3.2 On July 1, 1941, the U.S. Government established Midland Army Airfield. The Army Air Corps established a flying school, to include bombardier training. Ordnance storage facilities were constructed, as well as a skeet range and a gas defense instruction building.

2.3.2 Near the end of WWII, training slowed at Midland AAF, and instructions were issued to decontaminate all bombing ranges and to ensure the removal of all practice bombs at the airfield by April 1, 1946. The PA states that by April 17, 1946, "All serviceable practice bombs have been disposed of at Midland AAF. However, approximately 40,000 unserviceable practice bombs are still on hand" (USACE 2004a). Midland AAF was placed on temporary inactive status on June 15, 1946. The airfield was transferred back to the City of Midland on January 11, 1949.

2.3.4 The 2004 PA lists possible ordnance used at the various ranges for Midland AAF as M38A2 100-lb. practice bombs, M85 100-lb. practice concrete bombs, M47 100-lb. "chemical" bombs (sand-filled), AN-M30 100-lb. general purpose practice bombs, and M1A1, M3, and M5 spotting charges. The PA also notes that chemical agents in the form of chlorine and tear agents may have been used and stored at the Midland AAF. It is likely that Chemical Agent Identification Sets (CAIS) were used in training, and the disposal of these CAIS remains unknown (USACE 2004a).

2.3.5 In 1998, airport authorities reported that excavation for the airport terminal building uncovered practice bombs. "Based on the fact that practice bombs were discovered during construction of the new terminal building, which would have been within the former operations area, none of the property is presented as being free of potential contamination" (USACE 2004). Further, information was provided by Mr. Chuck Swallow, Director of Development for the City of Midland, that a piece of ordnance was uncovered during the construction of the parking garage in 2001.

2.4 CURRENT AND PROJECTED LAND USE

2.4.1 Midland AAF is currently being used as Midland International Airport. Future land use at this site is expected to remain the same. Surrounding areas include commercial/industrial properties typical of land surrounding an airport. Oil and gas production is prevalent in the area, as well as ranching.

2.4.2 Future land use at the airport is expected to remain the same. There are currently plans for development within the Skeet Range.

2.5 PREVIOUS INVESTIGATIONS

2.5.1 1988 Inventory Project Report

Midland AAF was found to have been formally used by DoD in this 1988 INPR, which included a Findings and Determination of Eligibility. A RAC score of “4” was assigned to the site.

2.5.2 2004 Final Preliminary Assessment

2.5.2.1 A Preliminary Assessment of the Midland AAF was conducted by CESWF in 2004. That report determined that the site was formerly used by the Department of War/DoD and recommended evaluation of possible ordnance contamination. A site visit was performed by the St. Louis District on July 19, 2004. Areas inspected included the ordnance storage area and the former skeet range.

2.5.2.2 The 2004 PA investigation located five structures remaining from military use at the airport. The airport uses storage igloos built by the DoD, and no MEC or related material was found in them upon investigation. However, throughout the center portion of the ordnance area, the team observed a number of M38 100-lb. practice bombs. It is assumed that these practice bombs were buried in the two Burial Pits, as none of the practice bombs contained spotting charge assemblies. Although the PA indicated that chemical (tear gas, *etc.*) training took place at Midland AAF, the PA does not indicate any specific information about where this training may have taken place. Midland AAF was assigned a RAC score of “4” (USACE 2004).

2.5.3 Inventory Project Review Supplement

2.5.3.1 An INPR Supplement was completed by USACE, St. Louis District in 2004 (USACE 2004b). It presented information concerning the presence of MD at the site that was based on the 2004 PA.

2.5.3.2 The INPR Supplement identified three MRSs at Midland AAF: “Burial Pit No. 1,” “Burial Pit No. 2,” and “Skeet Range.” Each MRS was assigned a RAC score of 5.

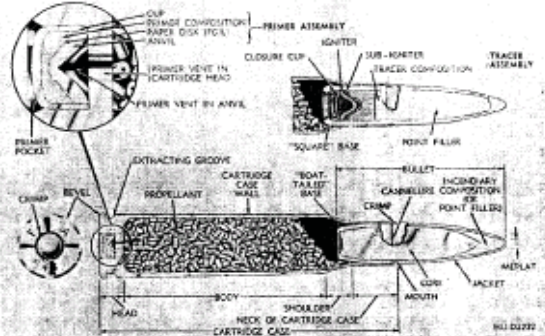

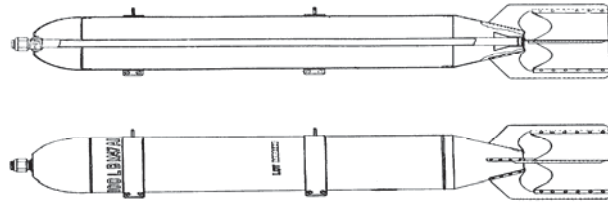

2.5.4 Annual Report to Congress

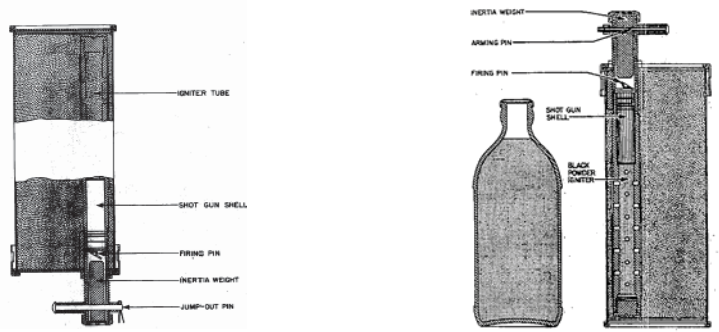
The Annual Report to Congress (DEP 2006) is consistent with the ASR Supplement in that the MRSs consist of 32 acres total. The land is considered to have limited public access.

2.6 MUNITIONS AND EXPLOSIVES OF CONCERN

Suspected or known munitions used at Midland AAF, based on the information presented in the INPR, PA, and INPR Supplement, are presented in Table 2.1. The table has been prepared as a visual and informational identification guide for use by the field team to ensure proper MEC and MD documentation. The breakdown of the components and fillers of these munitions and the potential munitions constituents is included in Chapter 4.

Table 2.1
Suspected or Known Munitions
Midland Army Airfield, Midland, Texas

Munitions	Photograph/Diagram
<p>Small Arms, General</p>	 <p>Figure 1. Typical cartridge (sectional)</p>
<p>M38A2, 100 lb. Practice bomb with spotting charge</p>	
<p>M47 and M47A2, 100 lb. Chemical Bomb (sand-filled)</p>	
<p>M85, 100 lb. Practice Bomb</p>	

Munitions	Photograph/Diagram
M1A1, M3, M5 Spotting charge	

2.7 PROJECT ORGANIZATION/POINTS OF CONTACT

2.7.1 CESWF is the USACE District for Midland AAF. The state regulatory authority for this site is the TCEQ. USEPA has also participated in planning associated with this site. The contact information for CESWF, USEPA, and TCEQ, as well as the rest of the site-specific team, is presented in Table 2.2.

2.7.2 The Parsons' SI field team for Midland AAF will be composed of three dedicated persons, each qualified in their area of expertise. The field team will be lead by the Field Team Leader (FTL) who will be knowledgeable of the historical and logistical details regarding Midland AAF. The FTL will manage the field team and make decisions on behalf of the Parsons' Project Manager (or his representative). The FTL will be supported by an individual charged with implementation of the approved MC sampling protocol as well as the techniques of the QR. Lastly, the field team will include a UXO Technician III tasked with ensuring all aspects of field safety as well as identification of MEC, MD, or other military debris encountered.

2.7.3 For the Midland AAF, the field team will be composed of the following individuals:

- FTL, to be determined (TBD);
- Sampling Lead, TBD; and
- UXO Technician III, TBD.

2.8 PROJECT SCHEDULE

Midland AAF was included as one of the sites awarded October 20, 2006 as part of the MMRP within the Southwest IMA Region - South Pacific Division Range Support Center. The project schedule, shown on Figure 2.2, is dynamic but has been updated to

reflect actual milestones achieved to date, as well as to incorporate government and regulator review cycles and submittals for pending milestones. The period of performance to complete the SI for this site is April 18, 2008.

Table 2.2
Key Technical Contacts
Midland Army Airfield
Midland, Texas

Organization	Name	Telephone/FAX
U.S. Army Corps of Engineers, Fort Worth District (CESWF) 819 Taylor Street, Room 3A28 Forth Worth, Texas 76102-0300	Ms. Patience Nwanna District Program Manager <i>Email:</i> patience.n.nwanna@swf02.usace.army.mil	(817) 886-1470 (817) 886-6443 (FAX)
U.S. Army Corps of Engineers, Albuquerque District (CESPA) CESPA-EC-G 4101 Jefferson Plaza NE Albuquerque, New Mexico 87109	Mr. Brian Jordan RSC MMRP SI Design Integrator <i>Email:</i> brian.d.jordan@spa02.usace.army.mil	(505) 342-3472
Texas Commission on Environmental Quality 12100 Park 35 Circle Building D, MC137 Austin, TX 78753	Ms. Kate McCarthy <i>Email:</i> kmccarth@tceq.state.tx.us	(512) 239-3060 (512) 239-2216
Texas Commission on Environmental Quality 3300 N. A Street Building 4 - 107 Midland, TX 79705	Mr. Ralph Johnson Project Manager <i>Email:</i> rajohnso@tceq.state.tx.us	(432) 570-1359
USEPA Region 6 6 PD-F 1445 Ross Avenue Dallas, Texas 75202-2733	Mr. Gary Miller <i>Email:</i> miller.gary@epa.gov	(214) 665-8306
4000 South Main Midland, TX 79701	Mr. Gary Painter Midland County Sheriff	(432) 688-4600
200 W. Wall, Suite No. 6 Midland, TX 79701	Mr. Mike Bradford Midland County Judge	(432) 688-4310

Table 2.2 (continued)
Key Technical Contacts
Midland Army Airfield
Midland, Texas

Organization	Name	Telephone/FAX
3300 N "A" Bldg 2-100 Midland, TX 79705	Mr. Randy Prude Commissioner, Precinct 3	(432) 685-1980
300 North Loraine Midland, TX 79702	Rick Menchaca City of Midland City Manger	(432) 685-7200
Parsons 5390 Triangle Pkwy, Suite 100 Norcross, Georgia 30092	Mr. Don Silkebakken Project Manager Email: Don.Silkebakken@Parsons.com	(678) 969-2384 (770) 446-4910 (FAX) (404) 606-0346 (cell)
Parsons 5390 Triangle Pkwy, Suite 100 Norcross, Georgia 30092	Ms. Laura Kelley Deputy Project Manager Email: Laura.Kelley@Parsons.com	(678) 969-2437 (770) 446-4910 (FAX) (404) 934-1266 (cell)
Parsons 8000 Centre Park Drive, Suite 200 Austin, Texas 78754	Ms. Julie Burdey Texas SI Team Leader Email: Julie.Burdey@Parsons.com	(512) 719-6062 (512) 719-6099 (FAX)
U.S. Army SPD Range Support Center CESPA-EC-EG 4101 Jeff Plaza, NE Albuquerque, New Mexico 87109	Ms. Monique Ostermann USACE MMRP SI Project Manager Southwest USACE geographic region Email: monique.m.ostermann@spa02.usace.army.mil	(505) 342-3475 (505) 342-3497 (FAX) (505) 235-4061 (cell)
U.S. Army Engineer Center Huntsville CEHNC-OE-CX 4820 University Square Huntsville, AL 35816-1822	Mr. Bradford McCowan Program Manager USACE MMRP SI Email: Bradford.L.McCowan@hnd01.usace.army.mil	(256) 895-1174 (256) 895-1378 (FAX)
U.S. Army engineer Center Huntsville CEHNC-MM-CX 4820 University Square Huntsville, Alabama 35816-1822	Ms. Deborah Walker MC Advisor Email: deborah.d.walker@hnd01.usace.army.mil	(256) 895-1796 (256) 895-1378 (FAX) (256) 722-8709 (cell)

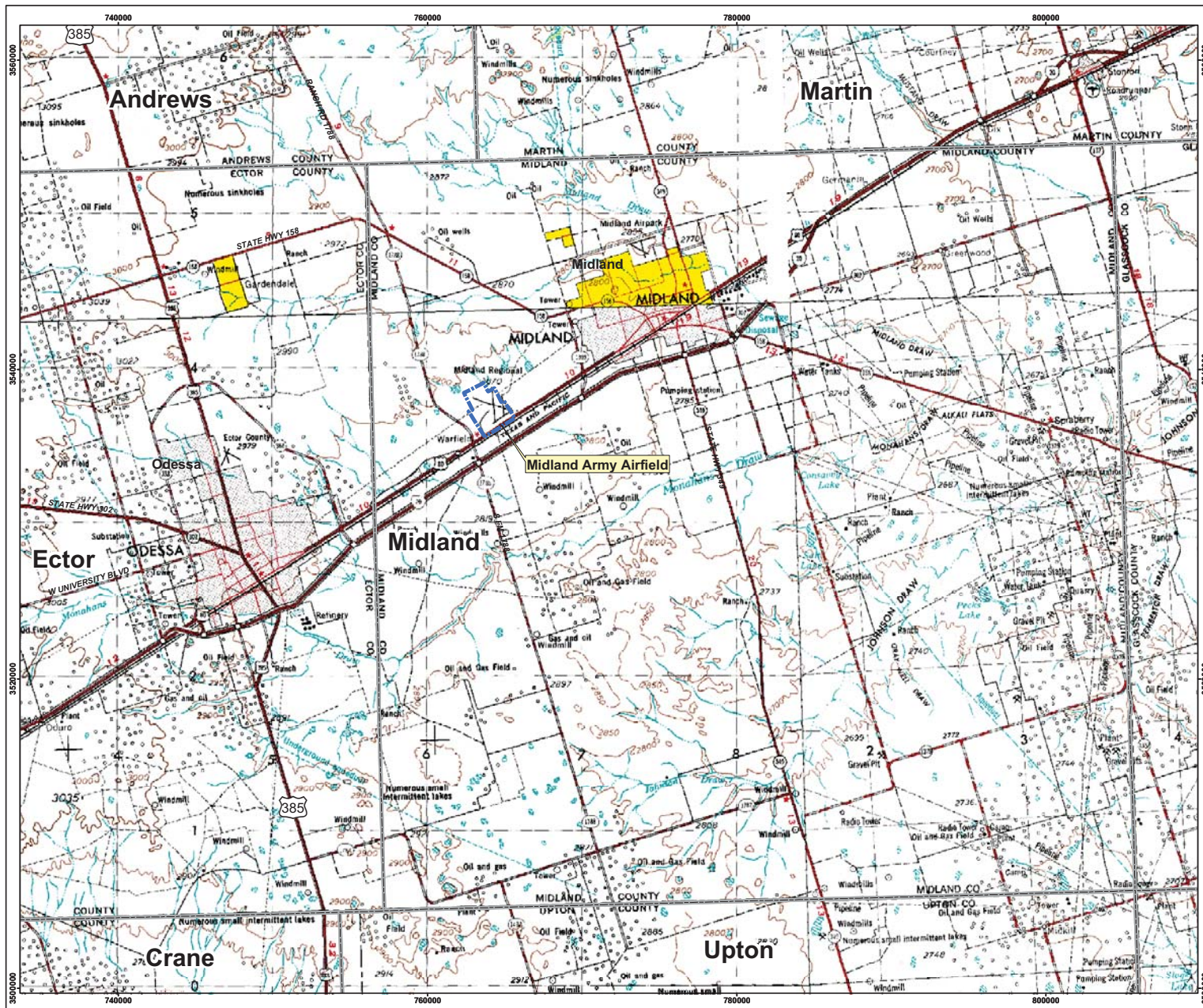


Figure 2.1

Site Location Map Midland Army Airfield

Ector, Glasscock, Martin, Midland, and
Upton Counties, Texas

Legend

- FUDS Boundary
- County Boundary

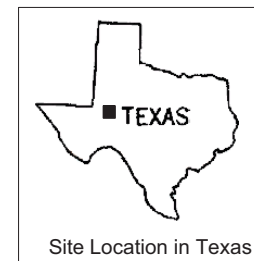


Image Source: USGS Topos
Projection: UTM Zone 13 NAD83, Map Units in Meters

5 2.5 0 5 Miles

PARSONS

U.S. ARMY SOUTH
PACIFIC DIVISION
RANGE SUPPORT CENTER

DESIGNED BY: BT	Site Location Map		
DRAWN BY: BT			
CHECKED BY: KV	SCALE: As Shown	PROJECT NUMBER: 744653.71000	
SUBMITTED BY: DS	DATE: October 2007	PAGE NUMBER: 2-11	
	FILE: X:\GIS\Site_Inspections_sw\Maps\midland_twpfig2_1_ssf.mxd		

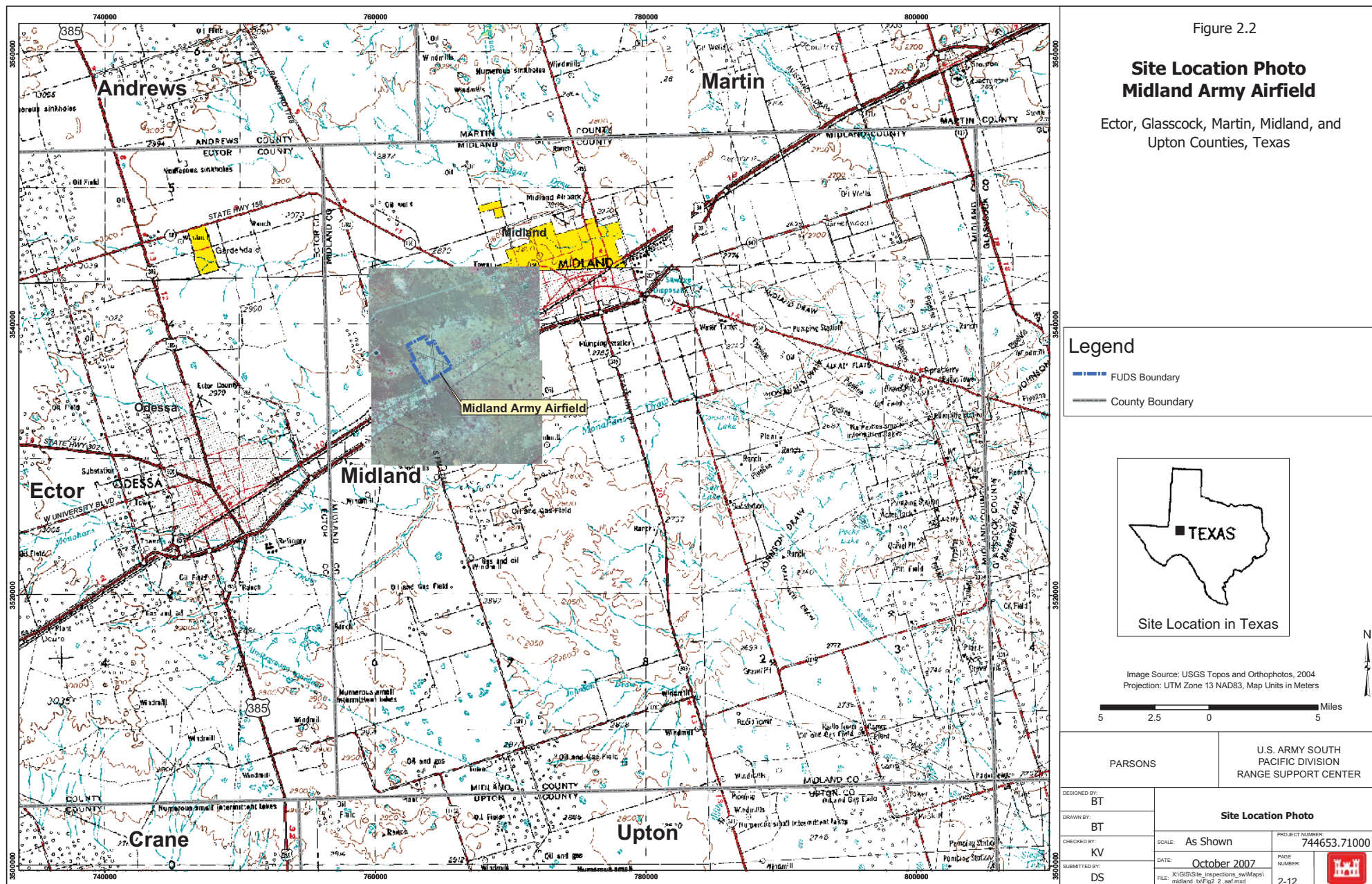
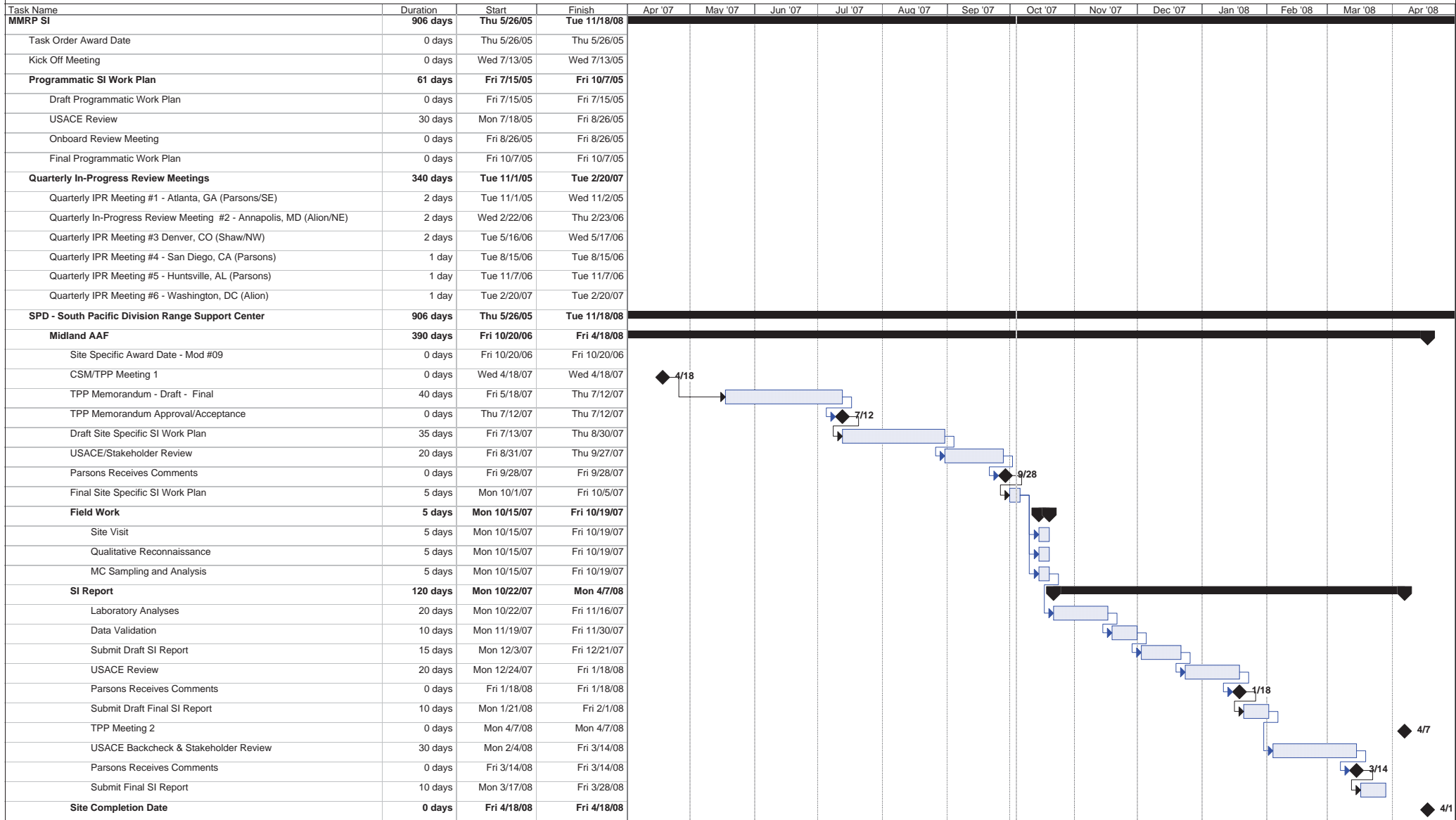


Figure 2.3
Project Schedule - Midland AAF



Project: MMRP SW Schedule - Nov 06 Date: Thu 10/4/07	Task		Milestone	◆	Summary		Rolled Up Milestone	◇
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CHAPTER 3

FIELD INVESTIGATION PLAN

3.1 TECHNICAL APPROACH

The overall approach to munitions response activities is presented in Chapter 3, Section 3.1 of the PWP. As stated in Chapter 1, the goal of the SI is to demonstrate a strategy for focusing the RI/FS that is anticipated to be recommended for the Burial Pits at this site, and NDAI for the Skeet Range. Therefore, the SI for Midland AAF will proceed in a manner to support a focused RI/FS for the Burial Pits, and the sample analyses are expected to support this outcome. The Technical Approach, as established during the April 18, 2007 TPP Meeting, will focus on a biased screening for the presence of MC in the areas with the highest likelihood to be contaminated. A QR strategy will be employed to evaluate the presence of MEC or MD and support a focused RI/FS determination for the Burial Pits, and a possible NDAI for the Skeet Range. Details of the site-specific MC and QR strategy for Midland AAF are described in subsequent sections of this Chapter.

3.1.1 Conceptual Site Model

As part of the TPP process, a “living” conceptual site model (CSM) and conceptual site exposure model (CSEM) have been developed for Midland AAF. The current CSM and CSEM are provided in Appendix B of this SS-WP Addendum. The CSM and CSEM will be revised throughout the SI process as additional site information is collected.

3.1.2 Data Quality Objectives

3.1.2.1 As stated in Section 1.2, the primary objective of this SI project is to evaluate, through QR and MC sampling, the applicability of the next appropriate CERCLA phase. In many instances, sufficient historical data exist (prior to the conduct of SI field activities) to justify proceeding directly to RI/FS; in other cases, an NDAI finding may appear likely.

3.1.2.2 Secondary objectives of this SI also include collection of sufficient data for the USEPA to develop the site-specific Hazard Ranking System (HRS) score as well as for the Office of the Secretary of Defense’s munitions response site prioritization protocol (MRSP).

3.1.2.3 To ensure accomplishment or attainment of the project objectives detailed above, Data Quality Objectives (DQO) were developed for Midland AAF in accordance with the process presented in Chapter 3, Section 3.1.2 of the PWP. The DQOs are outlined below along with criteria for achieving each specific DQO. The DQO worksheets are provided in Appendix A of this SS-WP.

3.1.2.1 Qualitative Reconnaissance Data Quality Objective

3.1.2.1.1 QR for Midland AAF will be conducted in accordance with the PWP, focusing on former target areas (Figures 3.1 and 3.2). The QR tracks represent 1.7 miles. The field team will, to the extent practical, cover that number of miles. If the QR tracks are limited due to vegetation, terrain, and/or structures, the field team will navigate through and/or around obstructions in order to proceed. The field team will proceed by walking side-by-side, at arms length, covering a 15-foot wide path as they advance. In the airport area, the QR may be limited based on access and security. The rationale for this QR approach is to concentrate sampling efforts and to gather information for a focused RI/FS recommendation. The QR will be conducted by the field team in a meandering path format from one sampling location to the next to include inspection of the site. Data collected during the QR will be used as “optimum” SI data for refinement of the recommendation for the next phase. The field team will use global positioning system (GPS) data to record locations of any anomalies observed during the QR.

3.1.2.1.2 To accomplish the QR SI component, the field team (including a UXO qualified individual) will employ the QR protocol detailed in the PWP to document visual observations of field conditions (topography and vegetation) and evidence of MEC (or MD indicative of MEC). In addition, the presence of craters, targets, firing berms, and other pertinent site features will be recorded to support the SI recommendation. The Schonstedt GA-92XTi geophysical instrument has been selected to be used for anomaly avoidance. The field team will record locations using the GPS of any anomalies observed during the QR.

3.1.2.2 Munitions Constituents Data Quality Objective

3.1.2.2.1 MC sampling for Midland AAF will be conducted at eight surface soil locations along the QR path, as agreed upon by the TPP Team during the April 18, 2007 TPP Meeting. Two discretionary surface soil samples are included for use by the field team. TCEQ, has requested that these two soil samples be collected within the Skeet Range MRS to provide support for the anticipated NDAI recommendation. One groundwater sample will be collected from an on-site groundwater well if it is equipped with a functional pump.

3.1.2.2.2 If the concentrations of MC detected in soil exceeds the screening criteria described in Chapter 4, then RI/FS may be recommended on the basis of MC contamination. The agreed upon screening levels and representative regional background data (soil only) are provided in Tables 4.5a (soil), 4.5b (groundwater). The CRREL “Seven-Point Wheel” sampling approach will be performed by measuring or using a template to establish the position along the perimeter and center of the 4-foot-diameter circle.

3.1.2.2.3 To accomplish the MC SI component, the field team (including a UXO qualified individual) will employ the MC sampling protocol detailed in the PWP, PSAP, and PSAP Addendum. MC soil analysis for the Skeet Range will consist of explosives,

metals (lead, antimony, and copper) and PAHs, as detailed in Tables 4.4a, 4.4b, and 4.4c, respectively. MC soil analysis for the Burial Pits will consist of explosives and lead, as detailed in Tables 4.4a and 4.4b. The Schonstedt GA-92XTi instrument has been selected to be used for subsurface anomaly screening prior to surface soil sample collection.

3.1.2.2.4 The TPP Team agreed on a list of analytes for sample analysis based on the munitions potentially used at the site. Table 2.1 lists the munitions that were potentially used at Midland AAF, based in the information presented in the PA (USACE 2004a), and INPR Supplement (USACE 2004b). Table 4.3 summarizes the MCs known to occur in these munitions. Although historic documentation does not confirm that high explosive bombs were used at this site, the TPP Team agreed to analyze for the entire suite of SW8330 analytes to address the possibility that those munitions might have been used. Section 4.7 discusses the chemical-specific DQOs.

3.1.2.3 Hazard Ranking System Data Quality Objective

Specific input data will be collected for USEPA to populate the HRS score sheets. The data will be collected from existing document sources. Source documents for HRS information will include the PA (USACE 2004a), and INPR Supplement (USACE 2004b). Data gaps will be filled via MC sampling as well as collection from local/state agencies (demographics/population, groundwater well users and supply sources/served population, *etc.*).

3.1.2.4 Munitions Response Site Prioritization Protocol Data Quality Objective

Specific input data will be collected and the three modules for the MRSPP populated as part of the SI. The modules include Explosive Hazard Evaluation (EHE), Chemical Warfare Materiel Hazard Evaluation (CHE), and Health Hazard Evaluation (HHE). The data will be collected from existing document sources. Source documents for MRSPP information will include the PA (USACE 2004a) and INPR Supplement (USACE 2004b). Data gaps will be filled via MC sampling as well as data collection from local/state agencies (State Historical Preservation Officer [SHPO] for cultural resources, United States Fish and Wildlife Service [USFWS] for ecological resources, Tax Assessor's Office for property ownership information, other County agencies for receptor information, groundwater well users and supply sources/served population, *etc.*).

3.2 SITE INSPECTION FIELD PLANNING AND LOGISTICS

3.2.1 Historical Research and Review

The existing body of information pertinent to Midland AAF was thoroughly reviewed in advance of the TPP Meeting on April 18, 2007 and summarized to the TPP Team as part of the development and concurrence of the selected Technical Approach for

the site. Sampling locations and QR planning, as presented in this SS-WP, were the direct result of this review process. This information has been augmented with institutional knowledge and additional documentation provided by CESWF or obtained by Parsons during coordination of the field effort. As part of mobilization preparation, the field team will be re-familiarized with all existing site information.

3.2.2 Right-of-Entry Agreements

CESWF will secure the ROE agreements for Midland AAF. ROEs will remain in the custody of the FTL at all times during the conduct of the SI field activities. ROE agreement letters are included in Appendix D.

3.2.3 Sensitive Biological and Cultural Resources

Parsons coordinated with CESWF to obtain information from the appropriate agencies to determine if sensitive biology, threatened and endangered species, or cultural resources are present at Midland AAF. The results of the coordination effort are presented in detail in Chapter 5. The TPP Team agreed that identification of the specific locations of sensitive information will not be presented in this SS-WP Addendum; however, the data were used during sampling location and QR planning. In addition, the FTL will have access to this information during the SI field effort. Chapter 5 of this SS-WP addresses precautions and identification procedures to ensure the SI actions are tailored to minimize any impacts at Midland AAF.

3.2.4 Equipment

There are no site-specific changes to the general SI equipment presented in the PWP. A Schonstedt GA-92XTi instrument will be used for anomaly avoidance at Midland AAF.

3.2.5 Communications

The primary means of on-site communication will be provided through cellular phones or two-way radios. The three-person field team will remain together throughout all aspects of the field activities.

3.2.6 Training and Briefing

Training and briefing requirements are presented in Chapter 3, Section 3.3.5 of the PWP. For Midland AAF, any additional training will be conducted on-site during the Daily Tailgate Safety Briefing to include endangered species, culturally sensitive areas, and anticipated ordnance types.

3.3 SITE INSPECTION FIELD DATA COLLECTION

3.3.1 The SI field activities at Midland AAF include both MC sampling and QR. No intrusive MEC investigations, explosives handling, or MEC detonation will be

conducted. In the unlikely event that a MEC item is identified during the SI, the approved procedures for reporting will be implemented, as presented in Appendix C.

3.3.2 The MC sampling locations were finalized during the TPP Meeting on April 18, 2007. The QR will be focused on the following MRSs: the Skeet Range, Burial Pit No. 1, and Burial Pit No. 2. Extensive QR of the buffer areas and remaining land will not be conducted beyond interviews with airport employees to further evaluate potential MEC contamination in these areas. The exact location of the QR route will be determined in the field by the FTL based on visual observations and areas of predetermined focus. As stated previously, sensitive biology and culturally significant areas will be avoided.

3.3.3 The duration of the SI field effort, inclusive of QR and MC sampling, is anticipated to be approximately five days, but will not be terminated until the objectives for the site are met. During this time, Parsons will implement the Technical Approach as described in the PWP and as established by the TPP Team on April 18, 2007 during the TPP Meeting. In addition to MC sampling and QR, Parsons will conduct the following field components for Midland AAF:

- Collect necessary MC-related data to provide to the USEPA to conduct HRS scoring; and
- Collect all data necessary to complete the MRSPP.

3.3.4 Data will also be gathered to identify any potential limitations to subsequent response actions, including RI/FS or NDAI.

3.3.1 Qualitative Reconnaissance

An integral part of the SI field activities will be completion of the QR in accordance with the baseline procedures described in Chapter 3, Section 3.4.3 of the PWP. For Midland AAF, QR will be conducted throughout the site to confirm known firing points and burial locations, as well as to evaluate the presence of MEC/MD in the remaining portions of the site. To achieve the project objective, the field team must have the ability to remain flexible during the QR to navigate toward the areas indicating the highest likelihood of containing MEC (and potential MC contamination). Visual indicators of suspect areas include (but are not limited to) distressed vegetation, stained soil, ground scars or craters, bunker/target remnants, and visible MEC or MD. These areas will be inspected for information that will be useful to determine whether a RI/FS recommendation is necessary and to qualitatively evaluate the concentration of residual MEC. The QR will incorporate the use of the Schonstedt GA-92XTi instrument (for safety purposes), GPSs, personal digital assistants (PDA), and digital photography. See Section 3.4.3.4 of the PWP for details.

3.3.2 Munitions Constituents Sampling

The PSAP has been developed by the Military Munitions Center of Expertise (MM CX) as part of the PWP. Parsons has prepared an Addendum to the PSAP to include contractor- and laboratory-specific information. For Midland AAF, the TPP Team agreed during the TPP process that the collection of seven surface soil samples and one groundwater sample would be sufficient to meet the SI project objectives. The approximate soil sample locations are depicted on Figures 3.1 and 3.2. Table 3.1 provides the sample identifications, anticipated coordinates, munitions suspected, and rationale for selecting the sample locations.

3.3.2.1 Soil Sampling

3.3.2.1.1 Four soil samples (#3, #4, #5, and #6) will be collected from within the Skeet Range and two surface soil samples (#1 and #2), one each from within the two Burial Pit MRSs, focusing on areas where MEC/MD has been observed based on interviews and site documentation. Two surface soil locations (#7 and #8) has been planned for collection in the “remaining land” for background PAH analysis information. Two discretionary surface soil samples are included for use by the field team. TCEQ has requested that these two soil samples be collected within the Skeet Range MRS to provide support for the anticipated NDAI recommendation. Qualitative comparison of biased (toward finding MC contamination) samples to Texas-specific background concentrations will be discussed in the SI Report for Midland AAF if on-site antimony, lead, or copper concentrations exceed applicable screening criteria (as agreed to at the TPP Meeting). Data collected from all MC samples (in conjunction with QR results) are expected to further decide if the site is to be recommended for RI/FS on the basis of MC contamination.

3.3.2.1.2 The actual coordinates of the soil samples presented in Table 3.1 were not groundtruthed prior to the conduct of the SI field activities, but rather established based on review of aerial photographs, historical training maps, and professional judgment. As such, the field team may navigate to a specified location and find that they are physically precluded from sampling at the location or otherwise adversely hindered by undesirable conditions (*e.g.*, bedrock exposure, developed/cultivated area, presence of a man-made structure/road, *etc.*). In these cases, the sample location will not be moved more than 100 feet without documenting justification in the Daily Report, to ensure that DQOs are met. However, sample locations depicted on SS-WP maps should be considered “preliminary” and the field team may move the sampling location to select the most appropriate, biased (toward finding MC) location, based on the objective of the sample. The samples will be taken within the corresponding area of concern, and if conditions indicate MC, the samples will be collected at that particular location as opposed to the original sample location.

3.3.2.1.3 The following guidelines will be followed to obtain the actual soil sample location. The field team will navigate to the GPS coordinates specified in this SS-WP as agreed to at the TPP Meeting. This action will be indirect as the QR activities and the

MC sampling will be conducted concurrently. Upon arriving at a “preliminary” sample location, the field team will survey the immediate visible area to select the most appropriate, biased (toward finding MC) location, based on the objective of the sample (with the exception of ambient sample selection). Criteria considered to be indicative of an MC-biased sample location are visual signs of MEC/MD, possible ground scars, craters, stained soils, or disturbed vegetation.

3.3.2.1.4 All surface soil sample locations will be screened and approved by the UXO Technician III (with regard to potential subsurface anomalies) prior to final location selection and sample collection. In accordance with the PWP, the CRREL “Seven-Point Wheel” sampling approach will be employed. The actual GPS coordinate for the center of the wheel at each sample location will be recorded and will be updated in the geographical information system (GIS) database. The process will be repeated for all soil sample locations.

3.3.2.2 Groundwater Sampling

One groundwater sample will be collected from the well shown on the topographic map (Figure 3.1) if it is accessible and equipped with a functioning pump. Due to the age of the onsite groundwater well and the high probability of lead in the piping, the TPP Team agreed that lead in groundwater would only be analyzed for if the well report shows a perched aquifer near ground surface. The well report obtained shows the water level at the time of the well installation at 38.50 feet in 1979, and in 1987, the water level at 40.37 feet. Therefore, only explosives, copper, and antimony analysis will be conducted on the groundwater sample. If the on-site groundwater well identified for sampling in Figures 3.1 and 3.2 is not equipped with a functioning pump, the groundwater sample will not be collected. GPS coordinates of the groundwater sample location will be recorded.

3.3.3 Sample Collection

The sample collection procedures presented in the PSAP, the Parsons’ Final PSAP Addendum, and in the PWP will be followed. Additional details regarding sample collection, investigation-derived waste (IDW) handling, and packaging are presented in Chapter 4 of this SS-WP.

3.3.4 Analytical Procedures and Data Validation

Analytical procedures and data validation are presented in Chapter 3, Section 3.5.3, of the PWP. The analytical methods to be used for the MC samples collected are listed in Chapter 4 of this SS-WP.

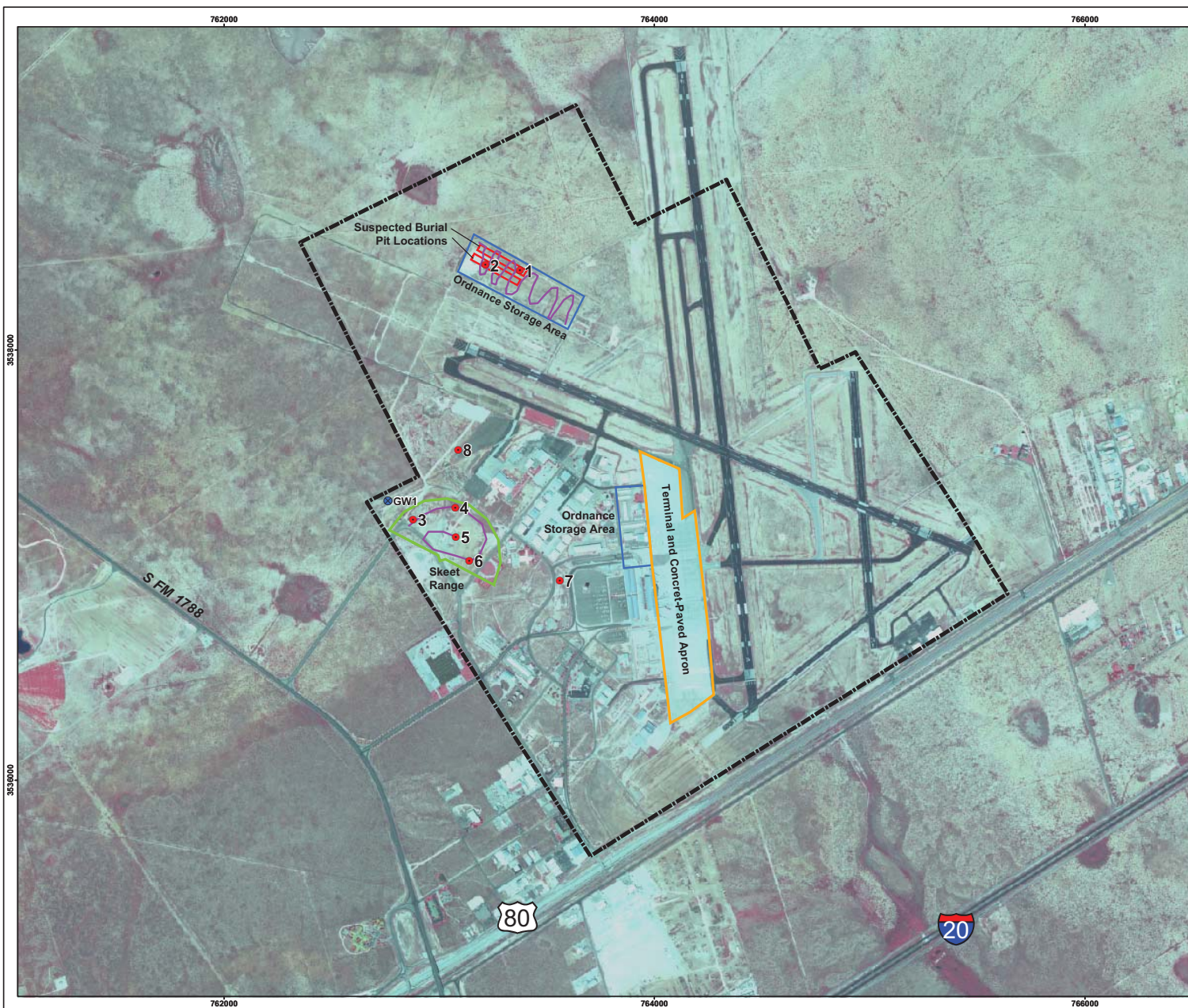


Figure 3.2

Qualitative Reconnaissance and Sample Locations Photo Midland Army Airfield

FUDS Project No. K06TX019901
Midland County, Texas

Legend

- Soil Sample Location
- Groundwater Sample Location
- Small Arms Range Boundary
- - - Installation Boundary
- Suspected Burial Pit
- Ordnance Storage Area
- Terminal and Concrete-Paved Apron
- Representative Qualitative Reconnaissance Track

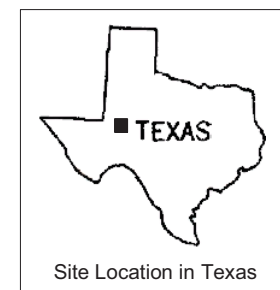



Image Source: Orthophotos, 2004
Projection: UTM Zone 13 NAD83, Map Units in Meters

1,500 750 0 1,500 Feet

PARSONS		U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER	
DESIGNED BY: BT	Qualitative Reconnaissance and Sample Locations Photo		
DRAWN BY: BT			
CHECKED BY: KV	SCALE: As Shown	PROJECT NUMBER: 744653.7100	
SUBMITTED BY: DS	DATE: October 2007	PAGE NUMBER: 3-9	
FILE: X:\GIS\Site_Inspections_sw\Maps\midland_tx\Fig3_2_aef.mxd			

SAMPLING RATIONALE
Midland Army Airfield, Midland County, Texas

Sample ID*	Sample Coordinates		Media	Analysis	Munitions	Rationale
Longitude	Latitude					
MAAF-BP1-SS-02-01	-102.21363	31.95079	Soil	Lead, Explosives	M38A2 100-lb Practice bomb M1A1, M3, and M5 Spotting Charges AN-M30 100-lb General Purpose Bomb M47 100-lb "Chemical" Bomb (sand-filled) M85 100-lb Concrete Practice Bomb	Sample around known burial pits, where DMM has been observed.
MAAF-BP2-SS-02-02	-102.21530	31.95105	Soil	Lead, Explosives	M38A2 100-lb Practice bomb M1A1, M3, and M5 Spotting Charges AN-M30 100-lb General Purpose Bomb M47 100-lb "Chemical" Bomb (sand-filled) M85 100-lb Concrete Practice Bomb	Sample around known burial pits, where DMM has been observed.
MAAF-SR-SS-02-03	-102.21919	31.94046	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-SR-SS-02-04	-102.21710	31.94092	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-SR-SS-02-05	-102.21711	31.93969	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-SR-SS-02-06	-102.21647	31.93869	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-RL-SS-02-07	-102.21205	31.93775	Soil	PAHs	Not Applicable	Background sample.
MAAF-RL-SS-02-08	-102.21688	31.94335	Soil	PAHs	Not Applicable	Background sample.
MAAF-DS-SS-02-09	TBD	TBD	Soil	Lead, antimony, copper; PAHs	Not Applicable	Discretionary sample for SI Field Team use, in the skeet range fan.
MAAF-DS-SS-02-10	TBD	TBD	Soil	Lead, antimony, copper; PAHs	Not Applicable	Discretionary sample for SI Field Team use, in the skeet range fan.
MAAF-GW-01	-102.22040	31.94128	Groundwater	Explosives, antimony, copper**	Not Applicable	Sample nearby groundwater well.

* - Sample depth of 2" to 6" is left to the discretion of the SI Field Team.

** - Groundwater sample will not be analyzed for lead due to the water depth, as agreed during the TPP Meeting.

CHAPTER 4

SAMPLING AND ANALYSIS PLAN

4.1 INTRODUCTION

The USACE MM CX prepared the PSAP (consisting of the Programmatic Field Sampling Plan and the Quality Assurance Project Plan [QAPP]) for the MMRP SI Program (USACE 2005). A PSAP Addendum was developed to describe Parsons' specific activities and procedures to be conducted during SIs. The Addendum augments the Final PSAP, documenting Parsons' specific variances from the PSAP and presenting laboratory-specific procedures of the TestAmerica laboratory, detection and quantitation limits, and precision and accuracy criteria. This Site-Specific Sampling and Analysis Plan is not meant to be a stand alone document and should be used in conjunction with the Final PSAP and the Final PSAP Addendum. This document only addresses information directly related to the site and any variances from the program-wide procedures presented in the PSAP or PSAP Addendum (Parsons 2006a). The PSAP (presented in Appendix E of the PWP) and PSAP Addendum for the Southwest Region applies to all work performed by Parsons and its subcontractors.

4.2 SAMPLE COLLECTION

4.2.1 Surface Soil Samples

Prior to the advancement of any sampling equipment, each discrete soil sampling location will be screened by the UXO-qualified team escort to verify that no metallic items are present in the subsurface. All surface soil samples will be collected using the procedures described in Section 5.1.2 of the PSAP and Section 5.1 of the PSAP Addendum. Each sample location will consist of seven discrete samples that will be homogenized into a composite sample in accordance with the PSAP/PSAP Addendum procedures. Soil will be transferred to the appropriate sample collection containers as presented in Table 4.1. All remaining soil will be returned to the discrete sample locations to assist the field team in restoring the soil sample location to its original condition.

4.2.2 Groundwater Samples

One groundwater sample will be collected from Midland AAF as described in Section 5.3.4 of the PFSP. The sample will be collected by the field team from the Well (Figures 3.1 and 3.2) if it is equipped with a functioning pump. The samples will be collected as direct discharge from the wells prior to passing through any pressure tank, filtration system, or treatment system in use, as possible. The groundwater sample will be collected in the appropriate sample collection container as presented in Table 4.1. If the groundwater well is not functional at the predetermined sampling location, a groundwater sample will not be collected. The coordinates will be documented to show

the exact location of the sampling point in the SI Report. A description of the well system and the sample collection point, as well as any filtration or treatment systems in place, will be documented in the PDA. If the tap/faucet has an aerator, mobile filtration system, or hose attached, it shall be carefully removed prior to running the tap, if the landowner has consented. Other than removing a hose, aerator, or mobile filtration system, the field team will not dismantle the plumbing in any way to collect a sample. The procedures for sampling groundwater from wells are as follows:

1. A spigot/faucet should be identified for sampling. The spigot/faucet should be located on the supply line before any storage tanks, aerators or filters (if possible).
2. The spigot/faucet will be purged at the maximum flow for 5 minutes to allow stagnant water from the spigot/faucet and line to the spigot/faucet to be removed. The hose will be removed once the purging has been completed.
3. The flow rate will be lowered to approximately 0.1 gallon/minute (gal/min).
4. The water will be monitored to determine stabilization using a water quality meter. The field parameters will be measured at least three times to determine stability (as defined in Section 4.2.3). The water quality meter will be rinsed according to the manufacturer's instructions after each use.
5. The samples will be collected directly from the spigot/faucet into the appropriate sample containers as listed in Table 4.1.
6. All field notes, including the documentation of the field parameters, will be maintained in the field team's PDA. The coordinates will be documented to show the exact location of the sampling point in the SI Report.

4.2.3 Field Measurements

4.2.3.1 Water quality parameters will be measured with a Horiba U-22 water quality meter prior to sample collection. The Horiba U-22 is a multi-parameter meter that measures all of the water quality measurements required for this project as described below. The following parameters will be measured:

- Conductivity (micromhos/square centimeter [$\mu\text{mhos}/\text{cm}^2$]);
- pH;
- oxidation-reduction potential (millivolts);
- temperature ($^{\circ}\text{C}$); and
- turbidity (in Nephelometric Turbidity Units [NTU]).

4.2.3.2 All water measurements will be documented in the PDA prior to sample collection. The water quality meter will be cleaned and stored in accordance with the manufacturer's instructions.

4.2.4 Sample Containers

The samples will be collected in the appropriate sample containers and preserved as listed in Table 4.1. The sample containers for the explosives analysis will be filled first, followed by the sample containers for metals. The cap will be secured tightly and the container clearly labeled as presented in Table 4.2. The sample containers will be placed on ice immediately. The sample handling and packaging procedures presented in Chapter 7 of the PSAP will be followed for all sample containers.

4.2.5 Quality Control Samples

4.2.5.1 Quality Control (QC) samples for Midland AAF will be collected at the required frequency as specified in the PSAP. Field duplicate (FD) samples will be collected at a frequency of ten percent per matrix (one in ten samples) and matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at a frequency of five percent per matrix (one pair in twenty samples). The QC samples will be collected in accordance with the procedures identified in Sections 5.6 of the PFSP and PFSP Addendum. The sample identifications for the QC samples are included in Table 4.2. The QC samples will be analyzed for the same parameters as the parent sample and will be collected simultaneously with the parent sample.

4.2.5.2 Equipment blanks will not be collected for Midland AAF since disposable sampling equipment will be used for sample collection. Temperature blanks will be included with each cooler sent to the laboratories.

4.2.6 Sample Shipment

The samples will be packaged and shipped in accordance with the procedures presented in Chapter 7 of the PFSP. The laboratory point of contact for Midland AAF is Ms. Lyn Benkers. Ms. Benkers' e-mail address is Lyn.Benkers@TestAmericaInc.com. The laboratory address for the field samples is:

TestAmerica, Inc.
4955 Yarrow Street
Arvada, CO 80002

Phone: (800) 572-8958
Fax: (303) 431-7171

4.3 INVESTIGATION-DERIVED WASTE

The field team will use disposable sampling equipment for the soil samples. Therefore, no IDW is anticipated to be generated with the exception of used gloves, paper, tape, *etc.* This IDW will be collected in trash bags and disposed of in a waste receptacle.

4.4 NONMEASUREMENT DATA

4.4.1 Nonmeasurement data will be collected for Midland AAF using the information found in the PA (USACE 2004a) and INPR Supplement (USACE 2004b). This initial information collected has been incorporated in this SS-WP Addendum. This site information will be supplemented using research via Internet searches, requests from agency contacts (*i.e.*, SHPO, USFWS, *etc.*), and site contacts, if applicable. Nonmeasurement data will include information relating to geology, climate, hydrogeology, federally and state-listed threatened and endangered species known to be or potentially be onsite, sensitive habitats, wetlands, cultural and archeological resources, water resources, coastal zone management areas, trees and shrubs, waste disposal sites, and impact mitigation measures.

4.4.2 Further data collection will be conducted to fulfill the contract requirements to complete the MRSPP scoring sheets and to collect the pertinent MC-related HRS scoring information. The primary information needed to complete the MRSPP scoring, such as hazard type (*e.g.*, explosive or chemical) and accessibility, will come from historical site documents (PA, *etc.*). To further supplement current on- and off-site information needed for receptor scoring, additional data collection will be conducted to fulfill the contract requirements to complete the MRSPP scoring sheets and to collect the MC-related HRS scoring information. Additional data will include information regarding current on- and off-site activities/structures, population density, CERCLA sites, Resource Conservation and Recovery Act (RCRA) sites, well locations (if any), and water supply information. Once the sampling has been completed and the samples have been analyzed, the data will be used to score the HHE of the MRSPP.

4.5 MUNITIONS CONSTITUENTS ANALYSIS

4.5.1 The list of munitions constituents to be analyzed at the site was derived based on the MEC known or suspected to have been used, stored, or disposed at Midland AAF. Each munition was evaluated according to type/model and filler composition and those constituents were included in the analysis list. Table 4.3 presents the potential MEC for the site as well as the fillers and case composition. These are further broken down into specific explosives and metals that would be indicative of the fillers. This table of constituents was used to develop the metals list for samples collected from Midland AAF. The samples from the Burial Pits will be analyzed for the full list of explosives as presented in the PSAP.

4.5.2 At the request of the USACE to aid in future geochemical analysis, sample analysis may include some metals not associated with munitions used or possibly used at the site. These metals will not be used in the screening process.

4.6 ANALYTICAL METHODS

4.6.1 Samples will be analyzed in accordance with the procedures presented in the PSAP Addendum. MC samples will be analyzed using USEPA SW846 as follows:

- Explosives - USEPA SW-846 Method SW8330;
- Antimony, Copper, and Lead - USEPA SW-846 Methods SW6020; and
- PAHs – SW8270C-SIM (Skeet Range samples only).

4.6.2 Tables 4.4a, 4.4b, and 4.4c list the appropriate analysis for each constituent. USEPA SW-846 Method SW8330 is being used because it has been approved by USEPA for explosives analysis.

4.7 DATA QUALITY OBJECTIVES

4.7.1 The scope of the CERCLA SI does not include conduct of a baseline risk assessment; however, Parsons will conduct screening level risk assessments (SLRAs) to assess the relative degree of risk to human health and the environment, if explosives are detected above the method detection limit (MDL), and/or if metals results exceed background concentrations. As agreed during the TPP Meeting, regional background metals concentrations will be considered representative of background of Midland AAF for the purposes of this SI. In addition, Texas-specific median background concentrations can also be used for surface soil comparison at sites across Texas, per TRRP (30 Texas Administrative Code [TAC] §350.51(m)). There are no known background metals concentrations established for groundwater in the area.

4.7.2 The DQOs have been developed for Midland AAF in accordance with the process presented in Chapter 3, Section 3.1.2 of the PWP and are provided as part of the Final TPP Memorandum documentation, presented in Appendix A of this SS-WP Addendum. DQOs have been developed to assess impacts to human health from the media and pathways considered both complete and the most likely to result in significant exposure at the site. All of the potentially complete human health exposure pathways are shown in the CSEM in Appendix B. The DQOs, and the basis for selecting those DQOs, are described in the following paragraphs. Explosives results in excess of these screening criteria are indicative of a need for further investigation at the site. Metals results in excess of both the screening criteria and the maximum detected ambient concentrations may also be indicative of a need for further investigation at Midland AAF.

4.7.1 Human Health Impacts Assessment

4.7.1.1 The medium considered most likely to have been impacted by Midland AAF activities is surface soil, and the TPP Team agreed that eight soil samples will be collected during the SI. The site currently consists of land used as a municipal airport. The airport owner (City of Midland), visitors to the airport, and airport workers

could all be exposed through incidental soil ingestion or dermal absorption of contaminants from soil, or the inhalation of contaminants in particulate dust. Therefore, the DQOs applicable to the surface soil samples for assessing impacts to human health will be TRRP Residential Tier I 30-acre Soil PCLs. In the absence of a TRRP PCL, the USEPA Region 6 Residential Medium-Specific Screening Levels (MSSLs) will be used. Where the Texas-specific median background concentration or PQL is higher than the PCL, the background concentration or PQL will be used instead of the TRRP PCL, as allowed by the TRRP rule. Chemical specific DQOs, laboratory MDLs, and PQLs for soil samples are shown in Table 4.5a.

4.7.1.2 It was agreed by the TPP Team that one groundwater sample will be collected during the SI. The groundwater sample will be collected from a public supply water well near the western boundary of the site. The DQOs applicable to the groundwater sample for assessing impacts to human health will be TRRP Tier I Residential Groundwater PCLs. The sample will be analyzed for explosives, antimony, copper, and lead. Chemical specific DQOs, laboratory MDLs, and PQLs for groundwater samples are shown in Table 4.5b.

4.7.1.3 As this is an SI, the investigation will focus on determining if a release of MC from munitions activities is causing a potential risk. Therefore, the media most likely affected by munitions activities at the site will be evaluated. Other media, though potentially affected by DoD munitions activities at Midland AAF, are not considered to result in significant exposure pathways to human receptors. Therefore, biota and air will not be evaluated as part of the human health SLRA. Other pathways may be evaluated at the RI/FS stage, as appropriate.

4.7.2 Ecological Impacts Assessment

A preliminary review of available information was conducted using the Army Checklist for Important Ecological Places (BTAG 2005). Based on the checklist, because the site contains no listed species, wetlands, or other sensitive environmental resources (as described further in Chapter 5), it is unlikely to be considered an important ecological place and is not managed for ecological purposes. Therefore, a SLERA is not planned to be conducted for this site. However, if field observations or other information result in this initial determination being re-evaluated, a SLERA will be conducted following the procedure outlined in TCEQ's *Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas* (TCEQ 2001) and the *Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas* (TCEQ 2006).

Table 4.1
Sample Containers, Preservatives, and Holding Times
Midland Army Airfield, Midland County, Texas

Parameter	Sample Container	Preservative	Holding Time
SOIL SAMPLES			
Explosives	1 4 oz wide-mouth glass w/ Teflon-lined cap	Cool to 4°C	14/40 days ^a
Lead, Antimony, and Copper	1 4 oz wide-mouth glass w/ Teflon-lined cap	Cool to 4°C	180 days
PAHs	1 4 oz wide-mouth glass w/ Teflon-lined cap	Cool to 4°C	14/40 days ^a
GROUNDWATER SAMPLES			
Explosives	2 1-L amber bottles	Cool to 4°C	7/40 days ^b
Antimony and Copper (Total)	1 500-ml plastic bottle	pH<2, HNO ₃ , Cool to 4°C	180 days

- (a) 14 days from sample collection to extraction / 40 days from extraction to analysis.
(b) 7 days from sample collection to extraction / 40 days from extraction to analysis.

Table 4.2
Sample Identification and Quality Control Samples
Midland Army Airfield, Midland County, Texas

Location/Sample Identification	Analysis				QC Samples ⁽¹⁾		
	Matrix	Explosives	Antimony, Lead, Copper	PAHs	Field Duplicate ⁽²⁾	MS ⁽³⁾	MSD ⁽³⁾
Midland Army Airfield (AAF)							
MAAF-BP1-SS-02-01	Soil	X	X		X (Explosives only)	X (Explosives only)	X (Explosives only)
MAAF-BP2-SS-02-02	Soil	X	X				
MAAF-SR-SS-02-03	Soil		X	X			
MAAF-SR-SS-02-04	Soil		X	X	X	X	X
MAAF-SR-SS-02-05	Soil		X	X			
MAAF-SR-SS-02-06	Soil		X	X			
MAAF-RL-SS-02-07	Soil			X			
MAAF-RL-SS-02-08	Soil			X			
MAAF-GW-01(4)	Groundwater	X	X		X	X	X
Discretionary Samples							
MAAF-DS-SS-02-09	Soil		X	X			
MAAF-DS-SS-02-10	Soil		X	X			

(1) – The QC samples will be analyzed for the same parameters as the parent sample.

(2) – The sample number for the field duplicate (FD) will be replaced with the FD number, with the actual sample number and the corresponding FD number recorded in the PDA/log.

(3) – MS/MSD will be noted in the Comments section of the Chain-of-Custody.

(4) – Groundwater sample will not be analyzed for lead, as agreed by TPP Team.

Table 4.3
Chemical Composition of MEC and Potential Munitions Constituents
Midland Army Airfield, Midland County, Texas

General Munition Type	Type/Model	Case Composition	Filler	Potential MC
Bomb, General Purpose, 100-lb	AN-M30	Steel	TNT, Amatol, Tritonal	TNT, iron, aluminum
Practice Bomb, 100 lb w/spotting charge	M38A2	Metal	Sand, wet sand, or water; spotting charge contains black powder	Iron, potassium
Chemical Bomb, 100-lb w/fuze and burster (sand-filled)*	M47	Sheet metal	Sand	Iron
Practice Bomb, 100-lb w/spotting charge	M85	Concrete	Concrete	N/A
Spotting charges	M1A1, M3, M5	Tin	Black powder, dark smoke filling, FS smoke mixture	Iron, potassium
Small arms ammunition	Shotgun shells	Brass, steel, aluminum	Brass, lead, propellant	lead, copper, antimony

* Note: Although called a “chemical bomb,” WWII-era M-47 ordnance specification sheets cite a prohibition on use of chemical filler in the M47.

Table 4.4a
Target Analyte List for Explosives by
High Performance Liquid Chromatography (HPLC)
Midland Army Airfield, Midland County, Texas

Explosive Compounds	Chemical Abstract Service (CAS) #	SW-846 Method
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	SW8330
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	SW8330
1,3,5-Trinitrobenzene	99-35-4	SW8330
1,3-Dinitrobenzene	99-65-0	SW8330
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	479-45-8	SW8330
Nitrobenzene	98-95-3	SW8330
2,4,6-Trinitrotoluene (TNT)	118-96-7	SW8330
4-Amino-2,6-dinitrotoluene	19406-51-0	SW8330
2-Amino-4,6-dinitrotoluene	35572-78-2	SW8330
2,4-Dinitrotoluene	121-14-2	SW8330
2,6-Dinitrotoluene	606-20-2	SW8330
2-Nitrotoluene (o-Nitrotoluene)	88-72-2	SW8330
3-Nitrotoluene (m-Nitrotoluene)	99-08-1	SW8330
4-Nitrotoluene (p-Nitrotoluene)	99-99-0	SW8330
Nitroglycerin	55-63-0	SW8330
Pentaerythritol Tetranitrate (PETN)	78-11-5	SW8330

Table 4.4b
Target Analyte List for Metals by Inductively Coupled
Plasma with Mass Spectra Detector (ICP/MS)
Midland Army Airfield, Midland County, Texas

Metals	CAS #	SW-846 Method
Antimony	7440-36-0	SW6020 ⁽¹⁾
Copper	7440-50-8	SW6020 ⁽¹⁾
Lead	7439-92-1	SW6020 ⁽¹⁾

(1) - The digestion method for 6020 aqueous samples is SW3005A and for soil samples is SW3050B.

**Table 4.4c Target Analyte List for Polycyclic Aromatic Hydrocarbons
by GC/MS (SIM)
Midland Army Airfield, Midland County, Texas
(based on SW-846 Method 8270C)**

Compound	CAS #	Comments
Acenaphthene	83-32-9	SW8270C-SIM
Acenaphthylene	208-96-8	SW8270C-SIM
Anthracene	120-12-7	SW8270C-SIM
Benz(a)anthracene	56-55-3	SW8270C-SIM
Benz(a)pyrene	50-32-8	SW8270C-SIM
Benz(b)fluoranthene	205-99-2	SW8270C-SIM
Benz(k)fluoranthene	207-08-9	SW8270C-SIM
Benz(g,h,i)perylene	191-24-2	SW8270C-SIM
Chrysene	218-01-9	SW8270C-SIM
Dibenz(a,h)anthracene	53-70-3	SW8270C-SIM
Fluoranthene	206-44-0	SW8270C-SIM
Fluorene	86-73-7	SW8270C-SIM
Indeno(1,2,3-cd)pyrene	193-39-5	SW8270C-SIM
Naphthalene	91-20-3	SW8270C-SIM
Phenanthrene	85-01-8	SW8270C-SIM
Pyrene	129-00-0	SW8270C-SIM

Table 4.5a
Chemical-Specific Data Quality Objectives, Laboratory MDLs, and PQLs for Soil Samples
Midland Army Airfield, Midland County, Texas

Analyte	Background Data	Human Health Screening Values Residential Soil (mg/kg)	TestAmerica Method Detection Limits MDLs and PQLs (mg/kg)	
	Regional Background Data (mg/kg) ⁽²⁾	Texas Risk Reduction Program Rule Tier 1, 30-acre PCLs ⁽³⁾	TestAmerica MDL ⁽⁴⁾	TestAmerica PQL
Hexahydro-1,3,5-trinitro-1,3,5-triazine	NA	0.018	0.013	0.18
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	NA	1.172	0.014	0.12
2,4,6-Trinitrotoluene	NA	0.086	0.016	0.12
1,3,5-Trinitrobenzene	NA	0.910	0.026	0.12
1,3-Dinitrobenzene	NA	0.004	0.031	0.12
2,4-Dinitrotoluene ⁽¹⁾	NA	0.003	0.022	0.12
2,6-Dinitrotoluene ⁽¹⁾	NA	0.002	0.030	0.12
2-Amino-4,6-dinitrotoluene	NA	0.050	0.016	0.12
2-Nitrotoluene (o-nitrotoluene)	NA	0.92	0.018	0.12
3-Nitrotoluene (m-nitrotoluene)	NA	0.92	0.014	0.12
4-Amino-2,6-dinitrotoluene	NA	0.033	0.021	0.12
4-Nitrotoluene (p-nitrotoluene)	NA	0.92	0.014	0.12
Nitrobenzene	NA	0.044	0.023	0.12
Nitroglycerin	NA	0.005	0.014	0.5
Methyl-2,4,6-trinitrophenylnitramine	NA	0.552	0.031	0.30
Pentaerythritol Tetranitrate (PETN)	NA	1238.680	0.014	0.50
Acenaphthene	NA	118	0.000160	0.005
Acenaphthylene	NA	204	0.000170	0.005
Anthracene	NA	3445	0.000133	0.005
Benz(a)anthracene	NA	5.645	0.000146	0.005
Benz(a)pyrene	NA	0.564	0.000143	0.005
Benz(b)fluoranthene	NA	5.708	0.000145	0.005
Benz(k)fluoranthene	NA	57	0.000130	0.005
Benz(g,h,i)perylene	NA	1780	0.000199	0.005
Chrysene	NA	560	0.000192	0.005
Dibenz(a,h)anthracene	NA	0.549	0.000243	0.005
Fluoranthene	NA	959	0.000209	0.005

Table 4.5a (contd.)
Chemical-Specific Data Quality Objectives, Laboratory MDLs, and PQLs for Soil Samples
Midland Army Airfield, Midland County, Texas

Analyte	Background Data	Human Health Screening Values Residential Soil (mg/kg)	TestAmerica Method Detection Limits MDLs and PQLs (mg/kg)	
	Regional Background Data (mg/kg) ⁽²⁾	Texas Risk Reduction Program Rule Tier 1, 30-acre PCLs ⁽³⁾	TestAmerica MDL ⁽⁴⁾	TestAmerica PQL
Fluorene	NA	149	0.000227	0.005
Indeno(1,2,3-cd)pyrene	NA	5.721	0.000244	0.005
Naphthalene	NA	16	0.000326	0.005
Phenanthrene	NA	208	0.000312	0.005
Pyrene	NA	558	0.000177	0.005
Antimony	1	2.7	0.0633	0.25
Copper	15	520	0.081	0.32
Lead	15	1.514	0.050	0.40

(1) – The carcinogenic DNT mixture values was used since they are more conservative than noncarcinogenic isomer-specific values.

(2) – Values from 30 Texas Administrative Code (TAC) §350.51(m)
http://info.sos.state.tx.us/fids/30_0350_0051-3.html.

(3) – TRRP Tier 1 levels (residential thirty acre source area), dated June 26, 2007 (TCEQ 2007)
<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>.

(4) – MDLs are updated annually by the laboratory during MDL studies. Values listed here are from Parsons, 2006b. Actual values may vary slightly.

NA – Not available.

Table 4.5b
Chemical-Specific DQOs, Laboratory MDLs, and PQLs for Groundwater Samples
Midland Army Airfield, Midland County, Texas

Analyte	TestAmerica Method Detection Limits (MDL) and Practical Quantitation Limits (PQL) (µg/L) ⁽³⁾		Human Health Screening Values Groundwater (µg/L)
	TestAmerica MDL ^(a) (µg/L)	TestAmerica PQL (µg/L)	Texas Risk Reduction Program Rule Tier 1 Residential PCLs ⁽²⁾
Hexahydro-1,3,5-trinitro-1,3,5-triazine	0.021	0.12	8.295
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	0.019	0.12	1222
2,4,6-Trinitrotoluene	0.022	0.12	12.22
1,3,5-Trinitrobenzene	0.010	0.12	733
1,3-Dinitrobenzene	0.011	0.12	2.4
2,4-Dinitrotoluene	0.019	0.12	1.34
2,6-Dinitrotoluene	0.022	0.12	1.34
2-Amino-4,6-dinitrotoluene	0.021	0.12	4
2-Nitrotoluene (o-nitrotoluene)	0.022	0.20	24.4
3-Nitrotoluene (m-nitrotoluene)	0.025	0.20	24.4
4-Amino-2,6-dinitrotoluene	0.019	0.12	4
4-Nitrotoluene (p-nitrotoluene)	0.026	0.20	24.4
Nitrobenzene	0.033	0.12	12
Nitroglycerin	0.045	0.15	1.7
Methyl-2,4,6-trinitrophenylnitramine	0.021	0.12	98
Pentaerythritol Tetranitrate (PETN)	0.015	0.12	9777
Antimony	0.07	6.0	6.0
Copper	0.56	2.0	1300

(1) –The carcinogenic DNT mixture values were used since they are more conservative than noncarcinogenic isomer-specific values.

(2) - TRRP Tier 1 levels (residential ^{GW}GW_{Ing}), dated June 26, 2007 (TCEQ 2007) (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

(3) - MDLs are updated annually by the laboratory during MDL studies. Values listed here are from Parsons, 2006b. Actual values may vary slightly.

NA – Not available.

CHAPTER 5

ENVIRONMENTAL PROTECTION PLAN

5.1 INTRODUCTION

5.1.1 This Environmental Protection Plan (EPP) has been prepared for the Midland AAF SI in accordance with Data Item Description (DID) MR-005-12 and the Performance Work Statement (PWS). Procedures for avoiding, minimizing, and mitigating potential impacts to biological and cultural resources during site field activities are described below. Chapter 7 of the PWP contains general procedures that will be adhered to by the SI team.

5.1.2 The following sources were consulted for identifying biological and cultural resources at the Midland AAF site:

- Topographic Map – U.S. Geological Survey (USGS)
- Wetlands Online Mapper – National Wetlands Inventory (NWI), USFWS
- Threatened and Endangered (T&E) Species System (TESS) – Endangered Species Program, USFWS
- National Wildlife Refuge System (NWRS) – USFWS
- State of Texas Parks and Wildlife Department (TPWD) Resources Protection Division
- Texas State Parks
- State of Texas Historical Commission (THC)
- National Register Information System (NRIS) – National Register of Historic Places (NRHP), National Park Service (NPS)
- List of National Historic Landmarks – National Historic Landmarks Program (NHL), NPS
- List of National Heritage Areas (NHA) – National Heritage Areas Program, NPS
- NRHP – Texas Historic Districts and State Landmarks, Midland County

5.2 ENDANGERED AND THREATENED SPECIES

5.2.1 According to the USFWS the state of Texas supports approximately 93 federally-listed T&E species consisting of 65 animals and 28 plants. According to the TPWD, among this diverse group of T&E flora and fauna are four federally listed species: the bald eagle (*Haliaeetus leucocephalus*), black-footed ferret (*Mustela nigripes*), whooping crane (*Grus americana*), and gray wolf (*Canis lupus*) that are known to occur in Midland County; therefore, potentially exist within the Midland AAF site.

However, the gray wolf and black-footed ferret have been extirpated from Midland County and the bald eagle is no longer listed by the USFWS for the state of Texas. Although the whooping crane migrates through Midland County it is unlikely for it to be found onsite due to the site currently being utilized as an airport. The one species potentially onsite is shown in Table 5.1. T&E species are not anticipated to be impacted by the SI effort.

5.2.2 Parsons will ensure that the site visit team is versed in identifying and avoiding these species and if any are observed, care will be taken to not disturb them or their immediate habitat. Parsons will provide this species awareness training in the daily tailgate safety meetings.

5.3 SENSITIVE ENVIRONMENTS

The Midland AAF site is not located within a national wildlife refuge, national park, national forest, county park, or state park. There is an air show annually at the airport in late September. TCEQ recommends that SI field work not be conducted at that time or in the month prior to the air show. Due to the site lacking the presence of T&E species, wetlands, and surface water and the depth to groundwater approximately 150 to 300 feet deep the site is not anticipated to be an ecologically important area. Sensitive areas are not anticipated to be impacted by the SI effort.

5.4 WETLANDS

5.4.1 The USFWS Wetlands Online Mapper through the NWI was used to identify the wetlands on the Midland AAF site. According to the NWI there is no wetland data for the site.

5.4.2 The Wetlands Online Mapper is used primarily for planning and does not accurately indicate jurisdictional limits of wetlands that are Waters of the United States. Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies.

5.4.3 Other wetlands not identified in the Wetland Online Mapper may be on the site. If additional wetlands are within the sampling area, they will be avoided if possible. However, the shallow sampling method planned would not have negative permanent impacts to any wetland nor warrant mitigation. If avoidance of wetlands is impossible and impacts to the area are expected to warrant mitigation, it may be necessary to delineate the wetlands according to the federal criteria of the USACE. The jurisdictional delineation will allow the degree of impact to be qualitatively and quantitatively determined and mitigation to be proposed. Wetlands are not anticipated to be impacted by the SI effort.

5.5 CULTURAL AND ARCHEOLOGICAL RESOURCES

5.5.1 According to the NRIS, NHL, NHA, NPS, and State of Texas Historical Commission databases there are no known cultural or archeological resources within the Midland AAF site. A request for information regarding potential cultural and archaeological resources on site has been submitted to the SHPO. To date, the SHPO has not yet responded. When this information is received it will be added in the Final Work Plan. Cultural or archaeological resources are not anticipated to be impacted by the SI effort.

5.5.2 During the SI effort, care will be taken to not impact any archeological remnants discovered during soil sampling. If an archeological remnant is discovered or suspected during the SI effort soil sampling will cease in that area, GPS coordinates taken, and the proper agency will be notified.

5.6 WATER RESOURCES

5.6.1 There are no surface waters or wetlands on site. The site is vulnerable to both long and short-term droughts. Any flooding that occurs would likely be due to heavy localized precipitation. No surface water samples are planned during the SI efforts.

5.6.2 The Ogallala aquifer system is the principle source of groundwater in the area and is used for irrigation, industrial, and domestic purposes. There is one groundwater sample planned from the well on site if it has an operational in-place pump. Due to the age of the well and the high probability of lead in the piping, lead in groundwater will only be analyzed for if the well report shows a perched aquifer near ground surface.

5.6.4 During the Midland AAF SI effort, Parsons will not conduct any activities that discharge pollutants into waterways or water bodies within, adjacent to, or outside of the former training areas.

5.7 COASTAL ZONES

According to the National Oceanic and Atmospheric Administration (NOAA) Coastal Zone Management Program (CZMP), the site does not lie within a coastal zone management area.

5.8 TREES AND SHRUBS

Trees and shrubs are covered in the PWP. There are no site-specific changes to the tree and shrub policy for Midland AAF. Neither cutting nor pruning of vegetation is anticipated to be necessary at the site.

5.9 WASTE DISPOSAL SITES


5.9.1 The Midland AAF included an ordnance storage facility for small arms ammunition, pyrotechnics, black powder, high explosives, and other chemical warfare materials. There are also two (2) one acre sized burial pits on site.

5.9.2 Waste disposal policies are covered in the PWP. There are no site-specific changes for Midland AAF. In general, excess soil generated during sampling will be returned to the original sampling location and the sample area restored as near as possible to the pre-sampling condition. Disposable sampling equipment and other garbage generated will be collected and disposed off offsite.

5.10 IMPACT MITIGATION MEASURES

Impact mitigation measures are outlined in the PWP. There are no site-specific mitigation measures for Midland AAF.

Table 5.1
State and Federally Listed Species Potentially Within
Midland Army Airfield

Common Name	Scientific Name	Federal Status	State Status
Whooping Crane 	<i>Grus Americana</i>	Endangered	Endangered

CHAPTER 6
SITE-SPECIFIC ADDENDUM TO THE PROGRAMMATIC
ACCIDENT PREVENTION PLAN

PROGRAMMATIC WORK PLAN
SOUTHWEST IMA REGION
MILITARY MUNITIONS RESPONSE PROGRAM
FOR
MIDLAND ARMY AIRFIELD, TEXAS

Prepared for:

U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
U.S. ARMY ENGINEERING AND SUPPORT CENTER HUNTSVILLE

Contract W912DY-04-D-0005
Delivery Order 0009

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October 2007

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10/5/2007
(Date)

Safety and Health Manager:
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(Signature)

10/5/2007
(Date)

CHAPTER 6

SITE-SPECIFIC ACCIDENT PREVENTION PLAN

6.1 APPLICATION

The intent of this chapter is to augment the Programmatic Accident Prevention Plan (PAPP), as warranted, to present pertinent site-specific information and procedural deviations that could not be readily captured in the programmatic documents or were the result of TPP Team agreements requiring modifications to the preliminary SI Technical Approach (see Section 1.3). It should be noted that the PAPP will accompany the SS-WP Addendum during the conduct of SI field activities. During the conduct of the SI field activities, the SI Field Team will not remove, dispose, or otherwise handle any UXO found on site. In the event an item determined to present a potential explosive hazard is found, the procedures described in the Interim Guidance Document (IGD) 06-05 will be followed. A copy of IGD 06-05 is included in Appendix C of this document. Due to safety considerations, the different hunting seasons for the region (September 1 through February 25) will be avoided. If the season cannot be avoided due to scheduling, the SI Field Team will make landowners aware of their locations.

6.2 MEDICAL SUPPORT

The PAPP documents the medical support plan for all sites associated with the Southwest and South Pacific Division Range Support Center. Medical support for the Midland AAF SI Field Team will be provided by its members, at least two of whom will be First Aid and Cardiopulmonary Resuscitation (CPR) certified personnel. Copies of certification will be maintained by the SI Field Team onsite during the field effort. In addition, copies of certification will be included in this SS-WP upon determination of the SI Field Team members. The local emergency contact numbers are listed in Table 6.1. The nearest hospital is the Midland Memorial Hospital located in Midland, Texas. Figure 6.1 shows the map and directions to the hospital from Midland AAF. In an emergency situation, the SI Field Team will follow the guidelines set forth in the Emergency Response and Fire Prevention Plan (ERFPP) in Appendix J of the PWP.

6.3 HAZARDS AND RISKS

6.3.1 The general hazards associated with tasks being performed during the conduct of the SI Program are detailed in the PWP (Appendix D, PAPP). The following sections provide a list of the hazards included in the PWP that are applicable to Midland AAF. The procedures that are to be employed to prevent accidents, injuries, and illness are discussed in, Attachment A, Chapter 2 of the PAPP.

6.3.2 The potential tasks associated with the Midland AAF SI requiring a Certification of Activity Hazard Analysis (AHA) include the following:

- Mobilization/Demobilization;
- Sample Collection and Packaging;
- Emergency Rescue; and
- Motor Vehicle Operation.

6.3.3 The AHAs are presented in Attachment 6-1 of this SS-WP and in Appendix D (PAPP), Attachment B of the PWP. Any hazards not addressed in the PAPP that apply to Midland AAF are detailed below.

Table 6.1
Emergency Telephone Numbers
Midland Army Airfield, Midland County, Texas

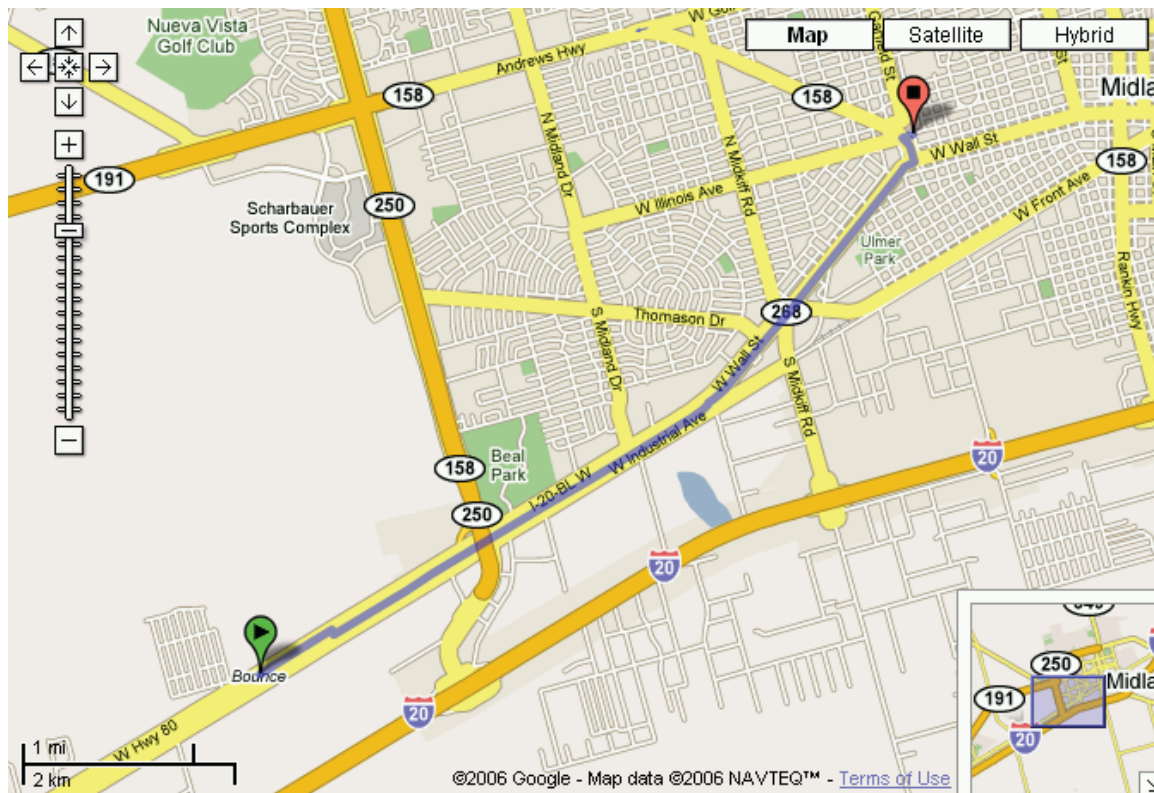
Midland Memorial Hospital	(432) 685-1111
Poison Control Center	1-800-222-1222
Midland County Sheriff	(432) 688-4600
Midland Fire Station	(432) 685-7337
Ambulance	(432) 570-4892
Project Safety and Health Manager Tim Mustard	(303) 764-8810
MEC Technical Director Michael Short	(678) 969-2451
Field Team Leader TBD	TBD
UXO Technician TBD	TBD
CESWF Project Manager Patience Nwanna	(817) 886-1882
USACE MMRP SI Project Manager Monique Ostermann	(505) 342-3475 (505) 235-4061 (cell)

Figure 6.1
Driving Directions: Midland Army Airfield

To:

Midland Memorial Hospital
2200 W. Illinois Ave
Midland, TX 79101
432)685-1111

- 1) Head NE on W. Hwy 80- go .5 mi
- 2) Turn Right- 161 ft
- 3) Turn Left at I-20-BL E – 3.2 mi
- 4) Slight Left at TX -268-SPUR- 1.2 mi
- 5) Turn Left at TX -158-BR- 0.2 mi
- 6) Turn Right at W. Illinois Ave – 344 ft
- 7) Arrive at W. Illinois Ave, Midland, TX 79701



6.4 PHYSICAL HAZARDS

The following physical hazards may be encountered during the conduct of the SI at Midland AAF. Please refer to the PAPP in the PWP for details regarding these hazards.

- Severe Weather;
 - High Winds;
 - Heavy Rains / Flash Flooding; and
 - Lightning
- Heat Stress.

6.5 DISCOVERY OF CHEMICAL AGENT IDENTIFICATION SETS

6.5.1 Chemical Agent Identification Sets (CAIS) consist of small quantities of various dilute chemical agents in glass vials, and bottles that were packed in metal shipping containers or wooden boxes. CAIS can be found in their original storage and shipping containers, such as metal containers and wooden boxes, or the CAIS glass vials and bottles may be found loose. Depending upon the chemical agent involved and the environment it experienced (e.g., heat, sunlight, and length of burial), the color of the chemical agent can vary drastically. The agent may be found in either solid or liquid form. The chemical agents that CAIS may contain can cause serious injury, even if solidified. Seek immediate medical attention if you believe that you have been exposed to chemical agents.

6.5.2 Upon discovery of CAIS, the item should be left undisturbed and the local sheriff should be contacted. The items should not be touched, handled, or moved under any circumstances, in accordance with Section 10.2 the PAPP (Ordnance Safety).

6.6 BIOLOGICAL HAZARDS

6.6.1 Insect and Arachnid Bites and Stings

Poisonous insects that may be encountered at the site discussed in the PAPP include:

- Bees/wasps;
- Ticks;
- Scorpions; and
- Spiders.

6.6.2 Snakes

6.6.2.1 Hazard Identification

Possible venomous snakes that could exist at Midland AAF include the rattlesnakes listed below (see figure 6.2).

6.6.2.2 Hazard Mitigation and Prevention

The hazard mitigation and prevention of snake hazards are described in the PAPP in the PWP and those procedures also apply to the above-listed snakes.

Figure 6.2
Midland County Poisonous Snakes



Crotalus atrox (Western Diamondback Rattlesnake)



Sistrurus catenatus edwardsii (Desert Massasauga)



Crotalus viridis viridis (Prairie Rattlesnake)

ATTACHMENT 6.1

ACTIVITY HAZARD ANALYSES

Note: First Aid and CPR training certifications for the field team will be provided as slip pages to the Final SS-WP prior to request for Notice to Proceed to the field.

ACTIVITY HAZARD ANALYSIS


Activity: MOBILIZATION/DEMOBILIZATION

Principal Steps	Potential Safety/Health Hazards:	Recommended Controls
Install/Dismantle equipment	Slips, trips, and falls	Worker shall be aware of potential slippery surfaces and tripping hazards. If power tools are necessary, extension cords shall not be permitted to traverse high traffic areas (use battery operated tools if possible). Potential slip, trip, and fall hazards will be discussed during the daily toolbox meeting.
	Cold and heat stress injuries	SSHO will implement heat stress/cold injury control program.
	Biological hazards	Workers will avoid hazardous plants, snakes, and insects. Site workers that encounter potential "Hanta Virus" locations shall adhere to procedures described in the Programmatic Site Safety and Health Plan.
	Tools	Hand and power tools shall be used in accordance with manufacturer's instructions. Hand and power tools shall be inspected, tested, and determined to be in safe operating condition before use by the operator of the tool. Tools having defects shall be taken out of service until repaired.
	Vehicle operation in work area	Site personnel operating vehicles will possess a current driver's license. A Ground guide will be used when: 1) the point of operation is not in full view of the vehicle operator, 2) when the vehicle is backed more than 100 ft, 3) when the terrain is hazardous, 4) when two or more vehicles are backing in the same area.
	Eye and Hearing protection	Level D protection will be worn while operating tools (includes safety glasses). Hearing protection will be used when any member of the team cannot hear another in normal conversation voice levels, within a distance of 3 feet.
	Back injury	Proper lifting techniques will be reviewed by the SSHO. A hand truck shall be used to lift objects greater than 50lbs (two workers may be used to lift heavy objects (>50lbs) when the object can be easily gripped [i.e., have handles or grip hold]).

Equipment to be used: Common hand tools and vehicles

Inspection Requirements: All equipment will be inspected by workers prior to use. If during inspection or during use, equipment fails to function properly, the equipment shall be turned in for repair/ replacement. If power tools are used, tools designed to accommodate guards shall be equipped with such guards. All guards must be functional before tool is used.

Training Requirements: All Site personnel will be current in their OSHA HAZWOPER training (received 40-hr initial training and 8-hr refresher training within past 12 months) and be enrolled in a medical monitoring program. Operators will be trained in the safe use of required equipment and in the proper use of personal protective equipment. UXO Personnel must be certified as EOD-trained. SSHO will provide a review of proper lifting techniques and potential slip, trip, and fall hazards.

Approver Signature:  Date: 10/5/2007
Ed Grunwald, Project Safety and Health Officer

ACTIVITY HAZARD ANALYSIS

Activity: SAMPLE COLLECTION AND PACKAGING

Principal Steps	Potential Safety/Health Hazards:	Recommended Controls
Surface soil collection	Contact with hazardous chemicals	All personnel will don a modified level D ensemble. Personnel will be familiar with the potential chemical hazards that may be encountered during soil sampling.
	Unplanned Detonation	UXO awareness training provided by SSHO. Only UXO technicians will handle MEC items. Intrusive operations will stop if MECs are encountered (only UXO technician has expertise to examine or confirm MEC).
	Slips, trips, and falls	Worker shall be awareness of potential slippery surfaces and tripping hazards. Potential slip, trip, and fall hazards will be discussed during the daily toolbox meeting.
	Cold and heat stress injuries	SSHO will implement heat stress/cold injury control program.
	Hand tools	The tool users will inspect the tools that they will use. No damaged equipment will be used until repaired or replaced.
	Biological hazards	Site personnel that encounter biological hazards will adhere to procedures described in this plan, and take precautions to prevent injuries from biological hazards. Site workers that encounter potential "Hanta Virus" locations shall adhere to procedures described in the Programmatic Site Safety and Health Plan.
	Back injury	Workers will be instructed in proper shoveling and auguring techniques. A hand truck shall be used to lift sample containers greater than 50lbs (two workers may be used to containers (>50lbs) when the objects can be easily gripped [i.e. have handles or grip hold]).
Surface water sample collection	Contact with hazardous chemicals	All personnel will don a modified level D ensemble. Personnel will be familiar with the potential chemical hazards that may be encountered during surface water sampling.
	Unplanned Detonation	UXO awareness training provided by SSHO. Only UXO technicians will handle MEC items.
	Slips, trips, and falls	Worker shall be awareness of potential slippery surfaces and tripping hazards. Potential slip, trip, and fall hazards will be discussed during the daily toolbox meeting.
	Cold and heat stress injuries	SSHO will implement heat stress/cold injury control program.
	Hand tools	Sampling tools shall be used, inspected and maintained in accordance with manufacturer's instructions. No damaged equipment will be used until repaired or replaced. Personnel shall be familiar with proper operation of equipment.
	Biological hazards	Site personnel that encounter biological hazards will adhere to procedures described in this plan, and take precautions to prevent injuries from biological hazards. Site workers that encounter potential "Hanta Virus" locations shall adhere to procedures described in the Programmatic Site Safety and Health Plan.


Principal Steps	Potential Safety/Health Hazards:	Recommended Controls
	Back injury	Proper lifting techniques will be reviewed by the SSHO. A hand truck shall be used to lift sample containers greater than 50lbs (two workers may be used to containers (>50lbs) when the objects can be easily gripped [i.e. have handles or grip hold]).
	Boating accident	Personnel collecting samples from a boat shall utilize a Type III, Type V work vests, or better U.S. Coast Guard approved international orange personal flotation device in addition to appropriate dermal protection and PPE (gloves, non-slip boots, and safety goggles,). Samplers will be familiar with the proper operation of the boat. Passengers will remain seated will boat is being operated. Sampling operations will only occur during daylight hours. Manually operated boats shall not be used where waters are rough or swift. Boats will be inspected prior to each use.
Groundwater sample	Contact with hazardous chemicals	All personnel will don appropriate dermal protection and PPE (i.e. gloves, eye protection, etc). Personnel will be familiar with the hazards associated with potential chemical that may be encountered in soils.
	Slips, trips, and falls	Worker shall be awareness of potential slippery surfaces and tripping hazards. Potential slip, trip, and fall hazards will be discussed during the daily toolbox meeting.
	Hand tools	Hand tools shall be used, inspected and maintained in accordance with manufacturer's instructions. No damaged equipment will be used until repaired or replaced. Personnel shall be familiar with proper operation of tool.
	Back injury	Proper lifting techniques will be reviewed by the SSHO. A hand truck shall be used to lift sample containers greater than 50lbs (two workers may be used to lift containers (>50lbs) when the objects can be easily gripped [i.e. have handles or grip hold]).
	Biological hazards	Site personnel that encounter biological hazards will adhere to procedures described in this plan, and take precautions to prevent injuries from biological hazards. Site workers that encounter potential "Hanta Virus" locations shall adhere to procedures described in the Programmatic Site Safety and Health Plan.
	Cold and heat stress injuries	SSHO will implement heat stress/cold injury control program.
Sample packaging	Contact with hazardous chemicals	All personnel will don appropriate dermal protection and PPE (i.e. gloves, eye protection). Personnel will be familiar with the hazards associated with chemical that may be encountered (sample preservatives, solvents, UXO constituents).
	Biological hazards	Site personnel that encounter biological hazards will adhere to procedures described in this plan, and take precautions to prevent injuries from biological hazards. Site workers that encounter potential "Hanta Virus" locations shall adhere to procedures described in the Programmatic Site Safety and Health Plan.
	Back injury	Proper lifting techniques will be used during debris removal. A hand truck shall be used to lift objects greater than 50lbs (two workers may be used to lift heavy objects (>50lbs) when the object can be easily gripped [handles]).

Principal Steps	Potential Safety/Health Hazards:	Recommended Controls
	Hand tools	The tool users will inspect the tools that they will use. No damaged equipment will be used until repaired or replaced. Personnel shall be familiar with proper operation of tool.

Equipment to be used: shovel, hand auger, samplers

Inspection Requirements: An inspection of PPE by workers will be conducted before each use. Equipment will be inspected daily by workers prior to use in accordance with the manufacturer's instructions. If during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/replacement.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program in accordance with 29 CFR 1910.120(f). UXO Personnel must be certified as EOD-trained. Personnel in charge of packaging and shipping will have completed DOT Hazmat packaging and shipping training.

Approver Signature:  Date: 10/5/2007
Ed Grunwald, Project Safety and Health Officer

ACTIVITY HAZARD ANALYSIS


Activity: EMERGENCY RESCUE

Principal Steps	Potential Safety/Health Hazards:	Recommended Controls
Treat injured personnel	Contact with blood borne pathogen	At least two members of field team will be current in their CPR/First aid training. First aid/CPR trained personnel will be familiar with the blood borne pathogen program and will utilize appropriate PPE when handling injured personnel. CPR/First aid trained personnel shall be familiar with emergency response procedures and the location of the nearest medical center.
	Slips, trips, and falls	Worker shall be awareness of potential slippery surfaces and tripping hazards. Potential slip, trip, and fall hazards will be discussed during the daily toolbox meeting.
	Cold and heat stress injuries	SSHO will implement heat stress/cold injury control program.
	Biological hazards	Site personnel have received blood-borne pathogen training during site-specific training.

Equipment to be used: First aid kit

Inspection Requirements: At least one Type II, 16unit first aid kit will be available onsite. The first aid kit will be inspected daily to ensure that it is fully stocked.

Training Requirements: At least two members onsite will hold current certification in first aid and CPR. CPR/First aid trained personnel will also be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program in accordance with 29 CFR 1910.120(f). CPR/First aid trained personnel will also receive UXO awareness as a component of their site-specific training.

Approver Signature:  Date: 10/5/07
Ed Grunwald, Project Safety and Health Officer

ACTIVITY HAZARD ANALYSIS


Activity: MOTOR VEHICLE OPERATIONS

Principal Steps	Potential Safety/Health Hazards:	Recommended Controls
Pre-operations inspection	Failure to identify and correct mechanical problems that may degrade vehicle safety	Prior to operation of vehicle. The driver shall check, at a minimum, brakes, steering mechanism, seat and shoulder belts, lights, signals, wipers, horn, back-up alarm (if applicable), mirrors, glass, and fluids. If cargo is being transported, restraints to prevent movement shall be employed. Vehicles with safety/ mechanical problems shall be removed from service until repaired.
Safe operation of vehicle.	Accident	Vehicle operator shall possess a current valid driver's license for the equipment being used. Seat belts and shoulder restraints shall be used by all vehicle occupants. Operator will obey posted speed limit and be vigilant for unsafe road conditions (reduced speed during rain or snow storms).
Vehicle Maintenance and Repair	Improper vehicle maintenance or repair	Vehicle maintenance and repair shall be performed IAW manufacturer's instruction and schedule. Maintenance and repairs are only to be performed by qualified mechanics.

Equipment to be used: Automobile or pick-up truck.

Inspection Requirements: Vehicles will be inspected daily by the operator to ensure that the vehicle is in safe operating condition and free of apparent damage that could cause failure while in use.

Training Requirements: All vehicle operators will receive defensive driving training. Operators will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program in accordance with 29 CFR 1910.120(f).

Approver Signature:  Date: 10/5/2007
Ed Grunwald, Project Safety and Health Officer

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APPENDIX A

TPP DOCUMENTATION

Technical Project Planning Memo:

Subject: Formerly Used Defense Site Military Munitions Response Program
Documentation of Technical Project Planning Team Concurrence for Site
Inspection Phase

Site: *Midland Army Airfield, K06TX019901, Midland County, Texas*

Contract: Contract Number W912DY-04-D-0005, Delivery Order 0009

This document is intended to record the conduct of Technical Project Planning (TPP) for *Midland Army Airfield* (Midland AAF). The TPP Team members listed below indicated concurrence with the Site Inspection (SI) Technical Approach as developed during the TPP meeting held at the Texas Commission on Environmental Quality (TCEQ) Midland Office in Midland, TX on April 18, 2007 from 9:00 to 11:00 am. Four target ranges (No. 13, No. 14, No. 16 and No. 17) were also discussed but this document is specific to the Airfield. An initial Technical Approach (as presented) was developed using the collaborative experience of Parsons and U.S. Army Corps of Engineers (USACE) technical experts in conjunction with available site information including the 2004 Preliminary Assessment (PA), 2004 Inventory Project Report (INPR) Supplement, and other pertinent documents and interviews. The TPP Team discussed and refined the initial Technical Approach during the course of the TPP meeting yielding a Final Technical Approach for implementation at Midland Army Airfield. The TPP Team's agreed upon Final Technical Approach is documented herein and will be further detailed in the forthcoming Draft Site-Specific Work Plan (SS-WP). The Draft SS-WP will be submitted to the TPP Team members for review to ensure the key aspects of the TPP meeting resolutions are fully captured. The details of the TPP meeting are included in this TPP Memorandum document to include sample location maps, revised TPP worksheets, and revised Conceptual Site Model (CSM).

Midland Army Airfield is located approximately 8 miles southwest of Midland within Midland County, Texas. Approximately 240 acres originally known as Sloan Field were acquired by the U.S. Government in 1927 for use as a landing field. In 1930, the military began making improvements to Sloan Field and assigning personnel to the facility.

In 1935, Sloan Field was sold to the City of Midland, which operated with the name Midland Municipal Airport. The City of Midland leased an additional 860 acres of land for airfield purposes in 1940. Subsequently, the military designated the airfield as an important site under the National Defense Program. Midland Army Airfield was established in 1941 and totaled 1,680.7 acres. In 1942, the Army Air Corps expanded the mission of Midland Army Airfield to include bombardier training activities at 23 local bombing ranges in the area.

In 1949, Midland AAF was transferred back to the City of Midland, which continues to operate the facility as a municipal airport.

Midland AAF included an ordnance storage facility for small arms ammunition, pyrotechnics, black powder, high explosives, and other chemical warfare materials. A skeet range was also constructed on the base. Midland Army Airfield contains three munitions response sites (MRSs) as defined by the INPR Supplement, including a skeet range and two burial pits.

- Skeet Range (30 acres) – A skeet range was used for shotgun/skeet practice. The skeet range was located in open country on the west side of the site, adjacent to the cantonment area.
- Burial Pit No. 1 (1 acre) – Where M38A2 practice bomb remnants and parts may have been buried prior to property turnover.
- Burial Pit No. 2 (1 acre) – Where M38A2 practice bomb remnants and parts may have been buried prior to property turnover.

The SI site visit will include munitions constituents (MC) sampling and QR. The QR will implement the use of a Schonstedt magnetometer (for anomaly avoidance only), global positioning system (GPS), personal data assistant (PDA), and digital photography in an integrated format. Procedural details of the field work will be provided in a Draft SS-WP (an addendum to the Programmatic Work Plan) for stakeholder review and comment. Parsons will conduct a review of existing biologically sensitive conditions as well as culturally significant areas that may exist within the project site as part of the SS-WP preparation. There are no wetlands at Midland Army Airfield, and it is not anticipated to be an ecologically important place.

The TPP Team concurs with the Technical Approach as revised at the TPP meeting on April 18, 2007, with the following issues and resolutions, as summarized below:

- Sampling locations depicted in the Advance Packet were based on the information provided in the PA and INPR Supplement. The TPP Team agreed to the sampling locations, methodologies, and analyses presented at the meeting, with exceptions described below. This TPP Memorandum and the associated documentation reflect the decisions made by the TPP Team.
- The TPP Team agrees that the exact soil sampling locations will be left to the professional judgment of the SI Field Team. It was agreed that they can move each sample location up to 100 feet without documenting justification for the adjustment. The sampling locations depicted on the CSM will serve as the point of departure to assist the SI Field Team in assessing conditions indicative of MC contamination associated with the ranges/areas (i.e., visible MEC, impact craters, presence of a target) and will represent the fallback sample location in the absence of any significant field observations.

- At the request of TCEQ, an additional two discretionary soil samples will be available to the SI Field Team to use to sample at additional locations where conditions indicative of possible MC contamination are present.
- Comparison criteria for the sampling results will be the most conservative Texas Risk Reduction Program (TRRP) Tier 1 Residential Soil Protective Concentration Levels (lowest of the soil-to-groundwater and total soil combined for a thirty acre site). In the absence of a TRRP PCL, USEPA Region 6 Residential Medium-Specific Screening Levels (MSSLs) will be used. Regional TRRP background levels will also be used for metals comparison. Where the practical quantitation limit (PQL) is higher than the PCL, the PQL will be used instead of the TRRP PCL, as allowed by the TRRP rule. Although the site is used for industrial purposes (airport), residential standards will be used as screening criteria in accordance with TRRP guidelines.
- Due to the age of the onsite groundwater well and the high probability of lead in the piping, lead in groundwater will only be analyzed for if the well report shows a perched aquifer near ground surface.
- Method 8330, which has been approved by USEPA for explosives analysis, will be used. The Cold Regions Research and Engineering Laboratory (CRREL) sampling approach will be used for collection of the samples. The new 8330B method will not be used due to schedule and budget constraints, as well as laboratory inability to perform the new method at this time. Parsons has received training for the new method and at some point in the future the new method will be implemented.
- It is unlikely that Midland Army Airfield will be considered an important ecological site because it is a municipal airport and contains no wetlands. No ecological screening level risk assessment is anticipated to be necessary.
- If MEC is encountered during the SI field activities, the landowner will be notified and advised to call the local sheriff's office. The landowner will also be told that if they do not notify the local sheriff within one hour, the SI field team will.
- CESWF will request Rights-of-Entry (ROE) from the landowners affected by the SI field work.
- An air show is conducted annually at the airport in late September. TCEQ recommends that SI field work not be conducted at that time or in the month preceding the air show.
- The TPP Team did not identify any site specific issues requiring an expedited project schedule or document reviews for this site.

- Following the TPP Meeting, Mr. Chuck Swallow, Director of Development for the City of Midland (432-685-7288), telephoned Ms. Emily Seidel and provided the following information: 1) A Phase I assessment has been conducted in the Skeet Range; a copy is available from Mr. Swallow; 2) there are current plans for development in the Skeet Range; and 3) Mr. Swallow confirmed that a piece of ordnance was found when the new parking garage went up in 2001. For more specifics he recommended contacting Kyle Womack who oversees Parkhill Smith and Cooper (he was the PM for the Airport Construction).
- All QR and MC results will be fully documented in an SI Report for the Project Team and other stakeholder review. The SI Technical Approach described above will not be modified without consultation and agreement by the Project Team whose names appear below.

Ms. Emily Seidel
USACE, Fort Worth District
Project Manager

Mr. Dwayne Ford
USACE, Fort Worth District
District Program Manager

Mr. Brian Jordan
U.S. Army Range Support Center
Design Integrator

Ms. Kate McCarthy, P.G.
Texas Commission on Environmental Quality
(TCEQ)
Project Manager

Mr. Ralph Johnson
TCEQ
Project Manager

Mr. Wm. M. Edmiston, P.E.
TCEQ
Project Manager

Mr. Gary Miller
EPA Region 6
Project Manager

Mr. Don Silkebakken, P.E.
Parsons
Project Manager / Program Manager

Ms. Julie Burdey, P.G.
Parsons
Texas SI Team Leader

Mr. Steve Rembish, PhD
Parsons
Project Manager

TPP Team		EM 200-1-2, Paragraph 1.1.1	
Decision Makers			
Customer	USACE Fort Worth District (CESWF)		
Project Manager	Emily Seidel, CESWF		
Regulators	Texas Commission on Environmental Quality, Kate McCarthy and Ralph Johnson; USEPA Region 6, Gary Miller		
Primary Stakeholders	City of Midland		
Data Types	Data Users	Data Gatherer	
Demographics/Land Use	Risk, Responsibility, and Compliance Perspectives	Parsons (Senior Scientist, Risk Specialist)	
Site Conditions	Remedy Perspective	Parsons (Geologist, Senior Scientist)	
Munitions and Explosives of Concern (MEC)	Risk and Remedy Perspectives	Parsons (UXO Technician III or higher, Risk Specialist, Senior Scientist)	
Munitions Constituents (MC)	Risk and Remedy Perspectives	Parsons (Chemist, Risk Specialist, Senior Scientist)	
Archaeology	Compliance and Remedy Perspectives	CESWF, Parsons (Staff Scientist, Senior Scientist)	
Endangered Species	Risk and Compliance Perspectives	CESWF, Parsons (Staff Scientist, Risk Specialist)	

CUSTOMER'S GOALS		EM 200-1-2, Paragraph 1.1.2	
Areas of concern (AOC)	Contaminant Issues	Future Land Use	Site-specific Closeout Goal (if applicable)
Skeet Range	MC	Airport	See below
Burial Pit No. 1	MC, MEC	Airport	See below
Burial Pit No. 2	MC, MEC	Airport	See below
Site Closeout Statement			
To manage the munitions and explosives of concern (MEC) and munitions constituents (MC) risk through a combination of remedial action, administrative controls, and public education; thereby rendering the site as safe as reasonably possible to humans and the environment and conducive to the anticipated future land use.			
Customer's Schedule Requirements			
Site Investigation and Reporting Complete by April 18, 2008			
Customer's Site Budget			
Site Investigation and Reporting: Fully funded for SI phase			

IDENTIFY SITE APPROACH		
EXISTING SITE INFORMATION & DATA EM 200-1-2, Paragraph 1.1.3 and 1.2.1		
Attachment(s) to Phase I TPP Memorandum	Located at Repository	Preliminary Conceptual Site Model
Preliminary Assessment (Archives Search Report)	N/A for SI Phase; Implemented in post-SI Phase as warranted	No
Site-Specific SI Work Plan	N/A for SI Phase; Implemented in post-SI Phase as warranted	Yes
POTENTIAL POINTS OF COMPLIANCE EM 200-1-2, Paragraph 1.2.1.3		
Determination of absence or presence of MEC/MC		
If MC is detected, comparison against TRRP residential 30-acre Protective Concentration Levels (PCLs) to determine if further MC evaluation during RI/FS is warranted.		
Use of regional background or MQL if higher, as allowed by TCEQ		
Avoidance of sensitive conditions: wetlands, endangered species, archaeological sites		
MEDIA OF POTENTIAL CONCERN EM 200-1-2, Paragraph 1.2.1.4		
Qualitative review of MEC presence.		
Quantitative screening of MC in soil.		
SITE OBJECTIVES EM 200-1-2, Paragraph 1.2.2		
Collection of sufficient MEC and MC data to support the RI/FS or NDAI.		
Eliminate from further consideration those releases that pose no significant threat to public health or the environment.		
Collection of sufficient data to perform MRSPP scoring and USEPA to conduct MC-related HRS		
Completion of the SI.		
<i>See Programmatic and Site-Specific Work Plan</i>		
<i>See Attached Worksheets Developed by the Project Team</i>		
REGULATOR AND STAKEHOLDER PERSPECTIVES EM 200-1-2, Paragraph 1.2.3		
Regulators	Community Interests / Others	
TCEQ requested 2 discretionary soil samples be available for the SI Field Team.	NA	
TCEQ requested that soil samples be taken 2" to 6" deep in duned areas.		
PROBABLE REMEDIES EM 200-1-2, Paragraph 1.2.4		
RI/FS characterization, if not NDAI		
Institutional controls / public education		
Remedial Action		
EXECUTABLE STAGES TO SITE CLOSEOUT EM 200-1-2, Paragraph 1.2.5		
Site Inspection		
NDAI, portions as appropriate		
RI/FS		
Proposed Plan		
Decision Document		
Remedial Design (RD)		
Remedial Action (as necessary)		
Longterm Management		
Recurring Review		

IDENTIFY CURRENT PROJECT		
SITE CONSTRAINTS AND DEPENDENCIES EM 200-1-2, Paragraph 1.3.1		
<u>Administrative Constraints and Dependencies</u>		
Rights of Entry (ROE)		
Fieldwork schedule coordination		
Cultural Resources		
Funding beyond the SI		
Concurrent planning programs		
Scheduling		
<u>Technical Constraints and Dependencies</u>		
Property owner/leaseholder site activities (Site access)		
MEC avoidance screening of MC sample locations for safety		
Cultural Resources		
Topography/vegetation		
Environmentally sensitive areas		
Minimize impact to cattle and petroleum exploration operations		
<u>Legal and Regulatory Milestones and Requirements</u>		
Consistent with CERCLA and NCP, and applicable state and federal regulations		
Public, stakeholder, and regulatory involvement and review of key documents (see schedule)		
Soil screening levels to include the most conservative of the Texas Risk Reduction Program (TRRP) Residential Tier 1 30-acre Protective Concentration Levels (PCLs). Regional background levels will be used to assess metals.		
Seek regulatory concurrence on key documents.		
CURRENT EXECUTABLE STAGE EM 200-1-2, Paragraph 1.3.3		
Site Inspection (TPP Memorandum, Site-Specific Work Plan, SI Report Recommendation with TPP Mtg #2)		
Basic (For Current Projects)	Optimum (For Future Projects)	Excessive (Objectives that do not lead to site closeout)
Site Inspection	RI/FS or NDAI	

Acronyms

AOC - Area of Concern
 CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
 CESWF - U.S. Corps of Engineers, Fort Worth District
 EPA - U.S. Environmental Protection Agency
 FUDS - Formerly Used Defense Sites
 HRS - Hazard Ranking System
 MC - munitions constituents
 MEC - munitions and explosives of concern
 MRSP - Munitions Response Site Prioritization Protocol
 MSSS - Medium Specific Screening Level
 NCP - National Contingency Plan
 NDAI - No Department of Defense Action Indicated
 PAH - Polycyclic Aromatic Hydrocarbons
 PCL - Protective Concentration Levels
 PQL - Practical Quantitation Limit
 RI/FS - Remedial Investigation and Feasibility Study
 SI - Site Inspection
 TBD - To be determined
 TCEQ - Texas Commission on Environmental Quality
 TPP - Technical Project Planning
 TRRP - Texas Risk Reduction Program

PROJECT OBJECTIVES WORKSHEET

SITE: **Skeet Range**
PROJECT: **Midland Army Airfield**

PAGE 1 of 3

Site Objective ^a				Data Needs	Data Collection Methods	Data User(s)	Project Objective Classification ^d	
Number	Executable Stage ^b		Description					Source ^c
	Current	Future						
1	Yes		Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives	Basic
2	Yes		Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil samples # 3 through 6? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives	Basic
3								
4								

a) Refer to EM 200-1-2, Paragraph 1.2.2

b) Refer to EM 200-1-2, Paragraph 1.2.5

c) For example, Meeting with Customer/stakeholder/Regulator, State Regulation____,

d) Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

ASR - Archive Search Report

LU - Land Use

IAW - In accordance with

MC - Munitions Constituents

MEC - Munitions and Explosives of Concern

PSAP - Programmatic Sampling & Analysis Plan

SS-SAP - Site Specific-SAP

PROJECT OBJECTIVES WORKSHEET

SITE: **Burial Pit No. 1**
PROJECT: **Midland Army Airfield**

PAGE 2 of 3

Site Objective ^a				Data Needs	Data Collection Methods	Data User(s)	Project Objective Classification ^d	
Number	Executable Stage ^b		Description					Source ^c
	Current	Future						
1	Yes		Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives	Basic
2	Yes		Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil sample # 1? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives	Basic
3								
4								

a) Refer to EM 200-1-2, Paragraph 1.2.2

b) Refer to EM 200-1-2, Paragraph 1.2.5

c) For example, Meeting with Customer/stakeholder/Regulator, State Regulation____.

d) Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

ASR - Archive Search Report

IAW - In accordance with

MEC - Munitions and Explosives of Concern

LU - Land Use

MC - Munitions Constituents

PSAP - Programmatic Sampling & Analysis Plan

SS-SAP - Site Specific-SAP

PROJECT OBJECTIVES WORKSHEET

SITE: **Burial Pit No. 2**
PROJECT: **Midland Army Airfield**

PAGE 3 of 3

Site Objective ^a				Data Needs	Data Collection Methods	Data User(s)	Project Objective Classification ^d	
Number	Executable Stage ^b		Description					Source ^c
	Current	Future						
1	Yes		Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives	Basic
2	Yes		Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil sample # 2? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives	Basic
3								
4								

a) Refer to EM 200-1-2, Paragraph 1.2.2

b) Refer to EM 200-1-2, Paragraph 1.2.5

c) For example, Meeting with Customer/stakeholder/Regulator, State Regulation____,

d) Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

ASR - Archive Search Report

IAW - In accordance with

MEC - Munitions and Explosives of Concern

LU - Land Use

MC - Munitions Constituents

PSAP - Programmatic Sampling & Analysis Plan

SS-SAP - Site Specific-SAP

DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **1 of 4**

DQO Element Number^a	DQO Element Description^a	Site-Specific DQO Statement
Intended Data Use(s):		
1	Project Objective(s) Satisfied	Evaluate presence/lack thereof of MEC
Intended Need Requirements:		
2	Data User Perspective(s)	Risk, Remedy
3	Contaminant or Characteristic of Interest	MEC, Munitions Debris
4	Media of Interest	N/A
5	Required Sampling Locations or Areas and Depths	N/A
6	Number of Samples Required	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Indications of targets or impact areas. Visual confirmation of MEC.
Appropriate Sampling and Analysis Methods:		
8	Sampling Method	Qualitative Reconnaissance
9	Analytical Method	N/A

^a Refer to EM 200-1-2, Paragraph 4.2.1

DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **2 of 4**

DQO Element Number ^a	DQO Element Description ^a	Site-Specific DQO Statement
Intended Data Use(s):		
1	Project Objective(s) Satisfied	Evaluate presence/lack thereof of MC
Intended Need Requirements:		
2	Data User Perspective(s)	Risk, Remedy
3	Contaminant or Characteristic of Interest	Explosives, antimony, copper, lead, and PAHs
4	Media of Interest	Surface soil and groundwater as determined during TPP process
5	Required Sampling Locations or Areas and Depths	Shown on Figures 3A and 3B, as determined by TPP Team. Locations based on burial pits and skeet range. 2" to 6" depth composite CRREL sampling in duned areas, otherwise, 2".
6	Number of Samples Required	7 surface soil samples, and one groundwater sample, plus associated QC samples. Up to 2 discretionary surface soil samples.
7	Reference Concentration of Interest or Other Performance Criteria	Texas Risk Reduction Program Residential Tier 1 30-acre PCLs
Appropriate Sampling and Analysis Methods:		
8	Sampling Method	Composite samples in accordance with the PSAP and PSAP Addendum
9	Analytical Method	Explosives (SW8330); antimony, copper, lead (SW6020); PAHs (SW8270C)

^a Refer to EM 200-1-2, Paragraph 4.2.1

DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **3 of 4**

DQO Element Number ^a	DQO Element Description ^a	Site-Specific DQO Statement
Intended Data Use(s):		
1	Project Objective(s) Satisfied	Completion of MRSPP Scoring sheets
Intended Need Requirements:		
2	Data User Perspective(s)	Risk and Remedy
3	Contaminant or Characteristic of Interest	Explosives, chemical, and health hazards, if any, associated with field team observations
4	Media of Interest	Surface Soil and Groundwater as determined during TPP process.
5	Required Sampling Locations or Areas and Depths	NA
6	Number of Samples Required	NA
7	Reference Concentration of Interest or Other Performance Criteria	Completion of Explosive Hazard Evaluation (EHE) Tables 1-10, Chemical Warfare Materiel Hazard Evaluation (CWMHE) Tables 11-20, and Health Hazard Evaluation (HHE) Tables 21-25
Appropriate Sampling and Analysis Methods:		
8	Sampling Method	N/A
9	Analytical Method	N/A

^a Refer to EM 200-1-2, Paragraph 4.2.1

DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **4 of 4**

DQO Element Number^a	DQO Element Description^a	Site-Specific DQO Statement
Intended Data Use(s):		
1	Project Objective(s) Satisfied	Collection of USEPA HRS MC-related information
Intended Need Requirements:		
2	Data User Perspective(s)	Risk, Compliance, and Remedy
3	Contaminant or Characteristic of Interest	Explosives, lead, copper, antimony, and PAHs associated with MRSs and the observations of the field team
4	Media of Interest	Surface Soil and groundwater as determined during TPP process
5	Required Sampling Locations or Areas and Depths	N/A
6	Number of Samples Required	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Results of the MC analytical testing for USEPA to complete the MC-related HRS scoring.
Appropriate Sampling and Analysis Methods:		
8	Sampling Method	N/A
9	Analytical Method	N/A

^a Refer to EM 200-1-2, Paragraph 4.2.1

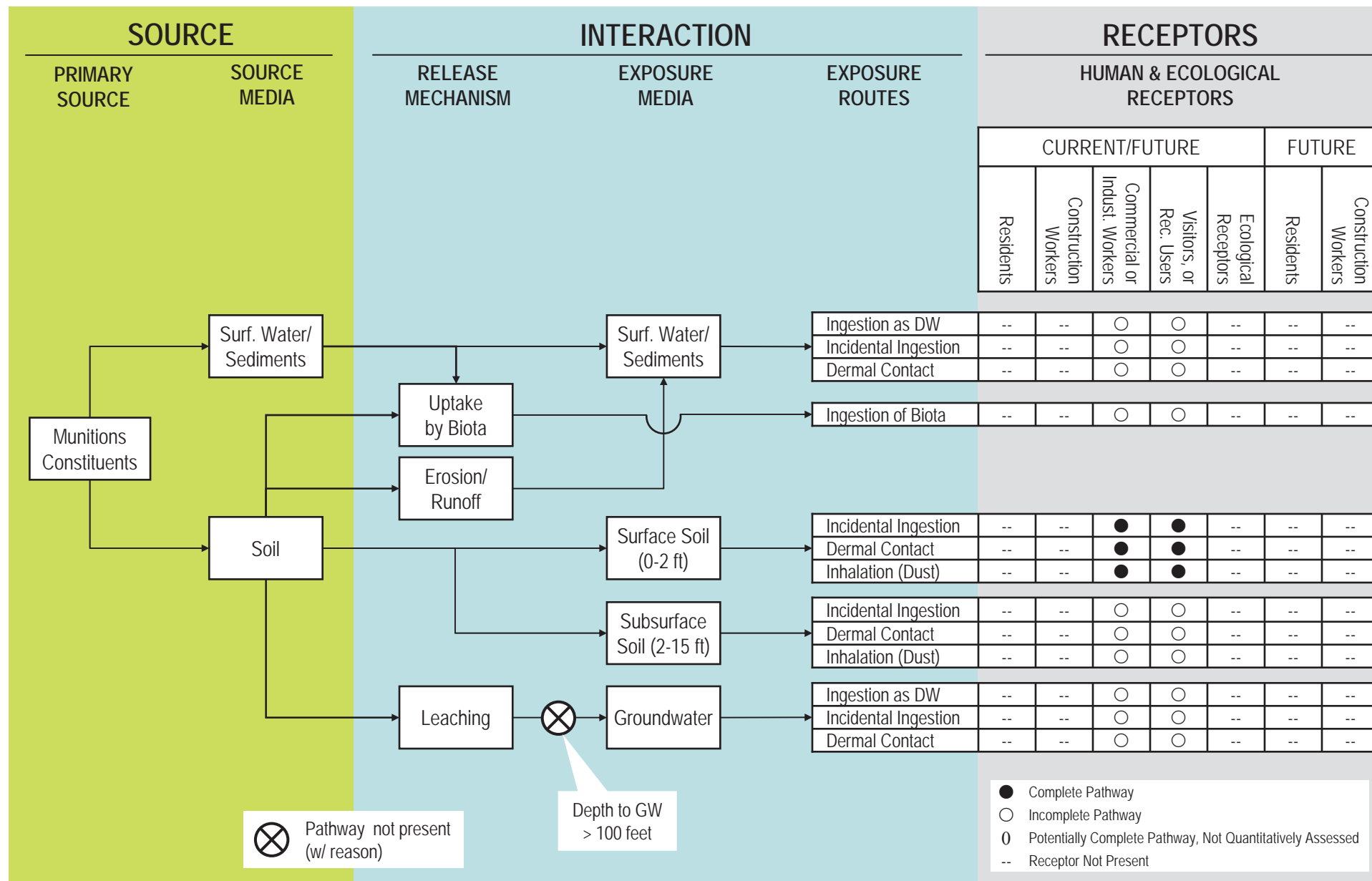
APPENDIX B
CONCEPTUAL SITE MODELS

CONCEPTUAL SITE EXPOSURE MODEL

MRS Name: Midland AAF – Burial Pit No. 1

Completed By: Liz Murrell, PARSONS

Date Completed: July 11, 2007

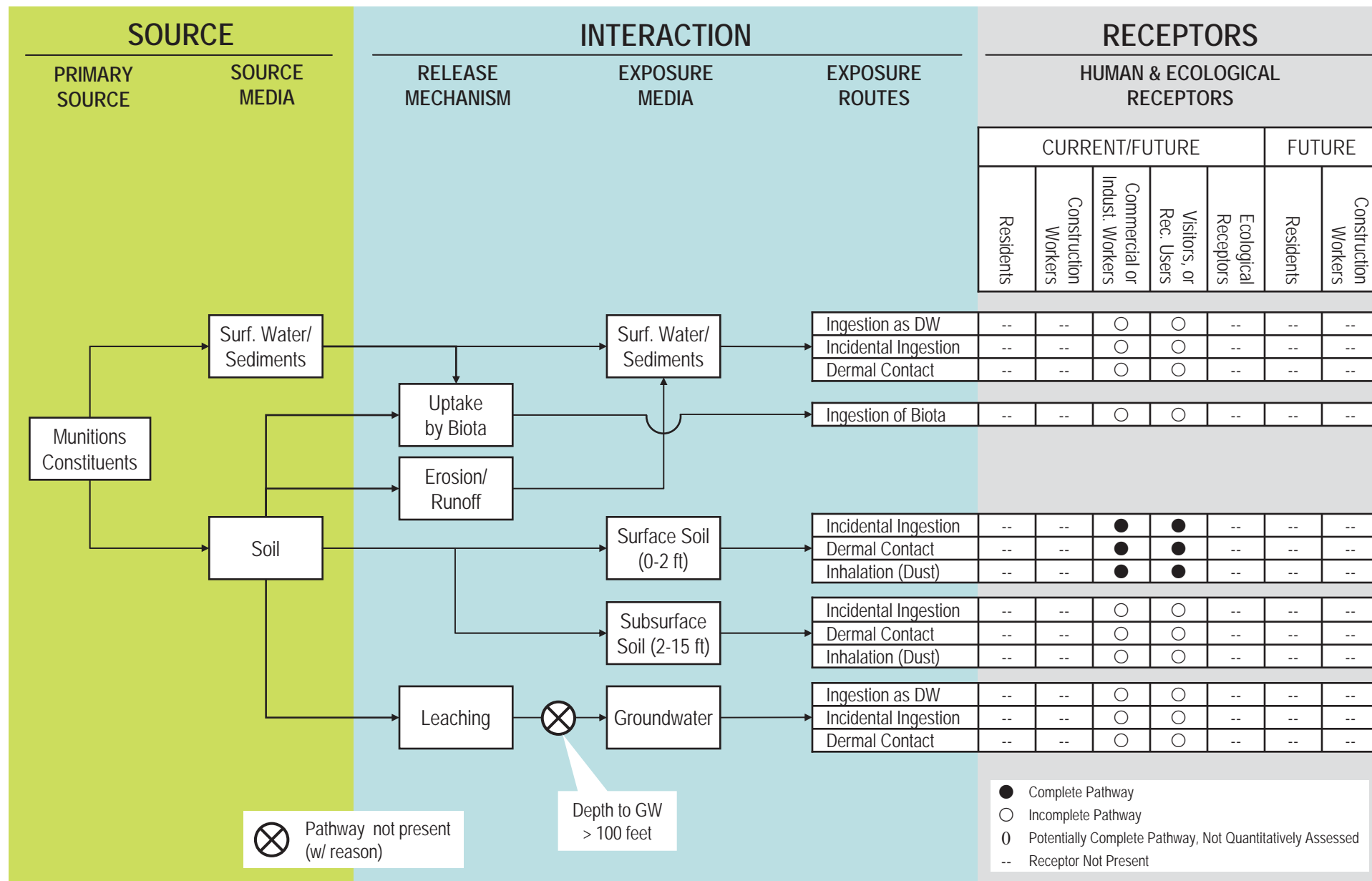


CONCEPTUAL SITE EXPOSURE MODEL

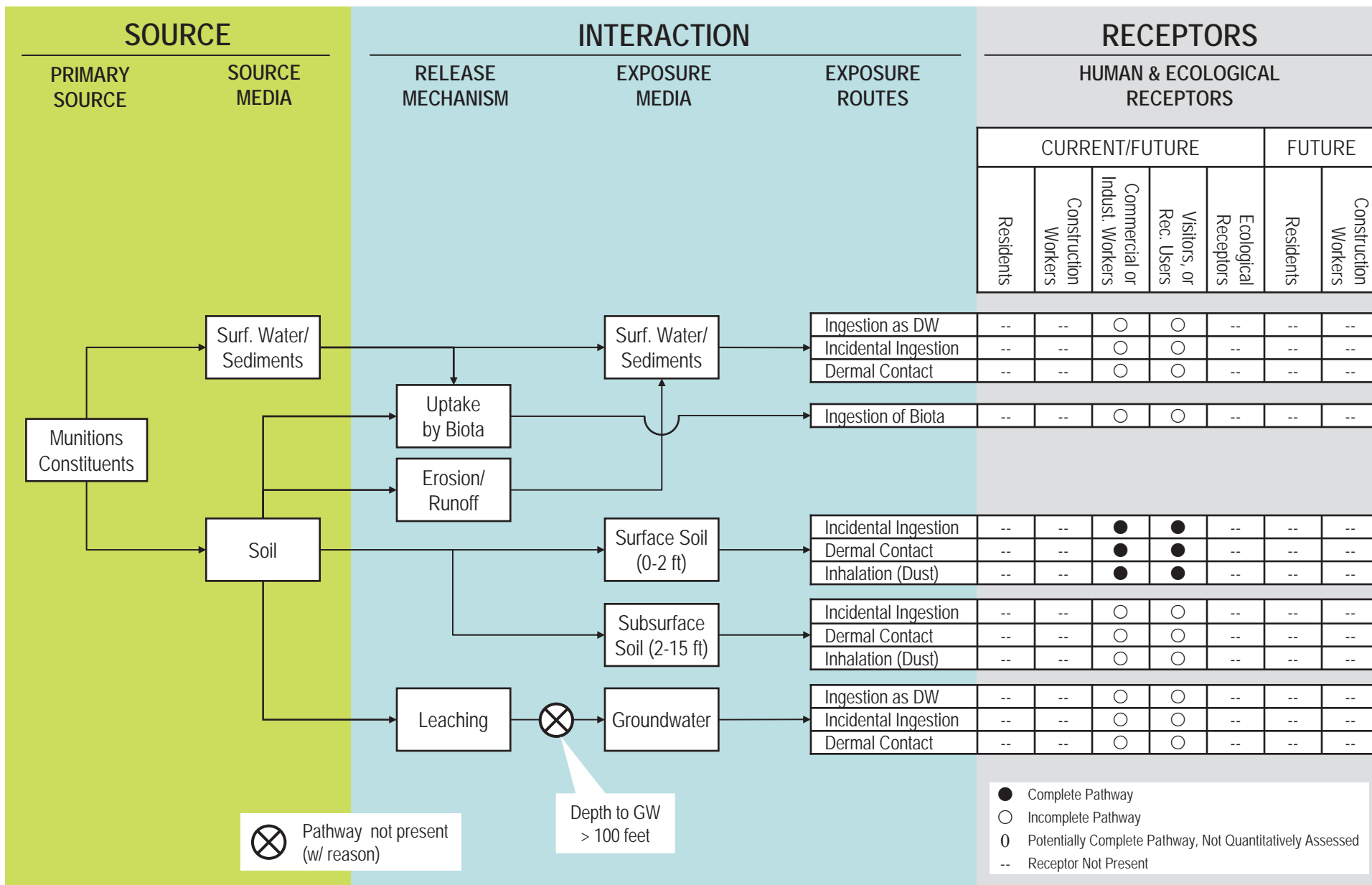
MRS Name: Midland AAF – Burial Pit No. 2

Completed By: Liz Murrell, PARSONS

Date Completed: July 11, 2007



Date Completed: July 11, 2007



CONCEPTUAL SITE MODEL – MUNITIONS AND EXPLOSIVES OF CONCERN

MIDLAND ARMY AIRFIELD

Midland County, Texas

Subsite/Range	Acreage*	Suspect Past DoD Activities	Potential MEC/MD Presence	MEC/MD Found Since Closure	Previous Investigation/Clearance Actions	Post-DoD Land Use and Current Land Use	Potential Receptors	Potential Source and Receptor Interaction	Proposed Field Sampling/ Qualitative Reconnaissance
SKEET RANGE	30	Skeet range	Small Arms Ammunition, General ^(1,2)	None	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #3-6 and groundwater sample #GW1 on Figures 3.1 and 3.2 / QR.
BURIAL PIT No. 1	0.93	Suspected disposal of unserviceable and/or unused practice bombs	M38A2 100-lb Practice bomb ^(1,2) M1A1, M3, and M5 Spotting Charges ^(1,2) AN-M30 100-lb General Purpose Bomb ⁽¹⁾ M47 100-lb "Chemical" Bomb (sand-filled) ⁽¹⁾ M85 100-lb Concrete Practice Bomb ⁽¹⁾	M38 practice bomb remnants observed during 2004 PA site visit.	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #1-2 on Figures 3.1 and 3.2 / QR.
BURIAL PIT No. 2	0.93	Suspected disposal of unserviceable and/or unused practice bombs	M38A2 100-lb Practice bomb ^(1,2) M1A1, M3, and M5 Spotting Charges ^(1,2) AN-M30 100-lb General Purpose Bomb ⁽¹⁾ M47 100-lb "Chemical" Bomb (sand-filled) ⁽¹⁾ M85 100-lb Concrete Practice Bomb ⁽¹⁾	M38 practice bomb remnants observed during 2004 PA site visit.	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #1-2 on Figures 3.1 and 3.2 / QR.
REMAINING LAND	1,649.14	None	None	8-9 practice bombs recovered during 1999 construction of the new terminal facilities. ⁽¹⁾ 1 practice bomb recovered during 2001 construction of new parking garage.	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #7-#8 on Figures 3.1 and 3.2
TOTAL	1,681								
				Source 1 = PA (2004) 2 = INPR Supplement (2004)	ASR = Archives Search Report DoD = Department of Defense INPR = Inventory Project Report MD = Munitions debris MEC = Munitions and explosives of concern PA = Preliminary Assessment QR = Qualitative Reconnaissance				

* - Total acreage accounts for overlap of subsites and is limited to project boundaries.

APPENDIX C

UXO REPORTING PROCEDURES

Midland Local Emergency Response Authority Phone Number - 911.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

MAR 16 2006

CEHNC-OE-CX

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Procedure for Preliminary Assessment (PA) and Site Inspection (SI) Teams that Encounter Unexploded Ordnance (UXO) While Gathering Non-UXO Field Data, Military Munitions Center of Expertise (MM CX) Interim Guidance Document (IGD) 06-05

1. PURPOSE: This procedure describes the responsibilities of project teams during the preliminary assessment and site investigation phases should unexploded ordnance (UXO) be discovered.
2. APPLICABILITY: This guidance is applicable to the geographic military Districts, Military Munitions Response Program (MMRP) Design Centers, Major Subordinate Commands (MSCs), and designated Remedial Action Districts performing MMRP response actions.
3. REQUIREMENTS AND PROCEDURES:
 - a. During site visits to formerly used defense site (FUDS) properties to gather PA or SI information, in the rare instance that a UXO-qualified individual identifies an item that is an explosive hazard, the following actions will occur:
 - (1) The property owner or individual granting rights of entry to the property will be notified of the hazard and advised to call the local emergency response authority (i.e., police, sheriff, or fire department). The individual will also be informed that if they do not call the local response authority within 1 hour, the individual who identified the UXO item will notify the local emergency response authority.
 - (2) The local response authority will decide how to respond to the reported incident, including deciding not to respond (e.g., if the local response authority is already aware of the hazards on the property). If the local response authority decides to respond, the individual who identified the item or his designee will mark the location of the item and provide accurate location information to the emergency response authority. The individual who identified the item or his designee will generally remain in the area until the local response authority arrives, unless specifically indicated by the appropriate response authority that the individual may leave the area.
 - (3) During the SI, the state regulator may also be notified at their request.

MAR 1 6 2006

CEHNC-OE-CX

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b. During site visits to active installations or Base Realignment and Closure (BRAC) sites to gather PA or SI information, in the rare instance that a UXO-qualified individual identifies an item that is an explosive hazard, the following actions will occur:

(1) The installation point of contact (POC) or the BRAC coordinator will be notified of the hazard and requested to notify explosive ordnance disposal (EOD) through their channels.

(2) The installation/EOD will make the determination if they are going to respond to the incident. The installation/EOD may be aware of the hazards at the site and make the decision not to respond. If the installation/EOD decides to respond, the individual who identified the item or his designee will mark the location and provide accurate location information to the installation/EOD unit and will remain in the area unless the installation/EOD unit requests otherwise.

c. Neither the US Army Corps of Engineers personnel, nor their contractors have the authority to call EOD to respond to an explosive hazard. This call is the responsibility of the local emergency response authority for FUDS properties and it must come through the proper chain of command on installations.

d. AR 75-14 and AR 75-15 contain the information on how EOD responds to explosives hazards.

4. EFFECTIVE DATES: The requirements and procedures set forth in this interim guidance are effective immediately. They will remain in effect indefinitely, unless superseded by other policy or regulation.

5. POINT OF CONTACT: If you need additional information, please contact Mr. Brad McCowan at 256-895-1174.



CAROL A. YOUKEY, P.E.
Chief, Center of Expertise for Ordnance
and Explosives Directorate

APPENDIX D
RIGHT-OF-ENTRY AGREEMENTS

DEPARTMENT OF THE ARMY
RIGHT OF ENTRY FOR SITE INSPECTION

MIDLAND ARMY AIR FIELD


DACA63-9-07-0462

The undersigned, hereby grants to the Department of the Army, its employees, contractors, and subcontractors a right-of-entry on the property located in the State of Texas, Midland County, and as shown on the attached map.

This right-of-entry is granted upon the following terms and conditions:

1. This right-of-entry may be exercised only for the purposes of making a visual inspection of the property described above and surveying it with a metal detector or other instrument for evidence of the presence of military munitions together with the right to collect such soil and/or water samples, not to exceed two liters each in volume, as may be necessary to permit a determination of whether military munitions are present on the property.
2. This right-of-entry may be exercised at any time between the date this right-of-entry is signed until eighteen (18) months thereafter, for a period not to exceed three days.
3. This right-of-entry does not grant any right to enter into any structure or building located on the property described above.
4. This right-of-entry may be revoked in writing by the undersigned upon thirty (30) days' prior notice delivered to the Department of the Army at: CESWF-RE-A (Agosto), Army Corps of Engineers, P.O. Box 17300, Fort Worth, Texas 76102-9887.

Dated this 15th day of August, 2007


Owner's signature

JAMES C. NELSON PRESIDENT, MIDLAND DEV. CORP.
Owner's printed name

Owner's mailing address: MIDLAND DEVELOPMENT CORP.

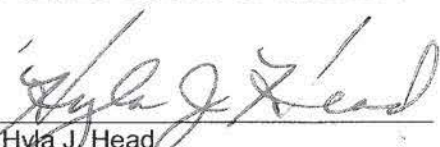
109 NORTH MAIN
MIDLAND, TX 79701

Home Telephone: _____

Work Telephone: 432-686-3564

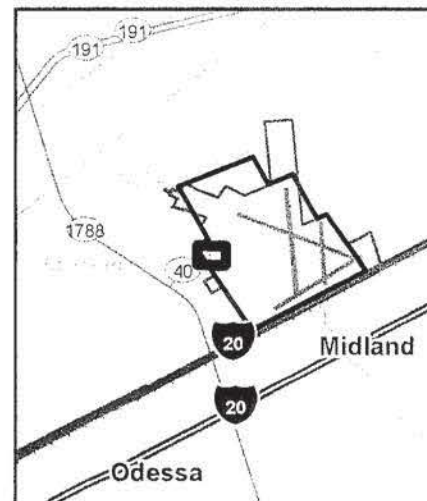
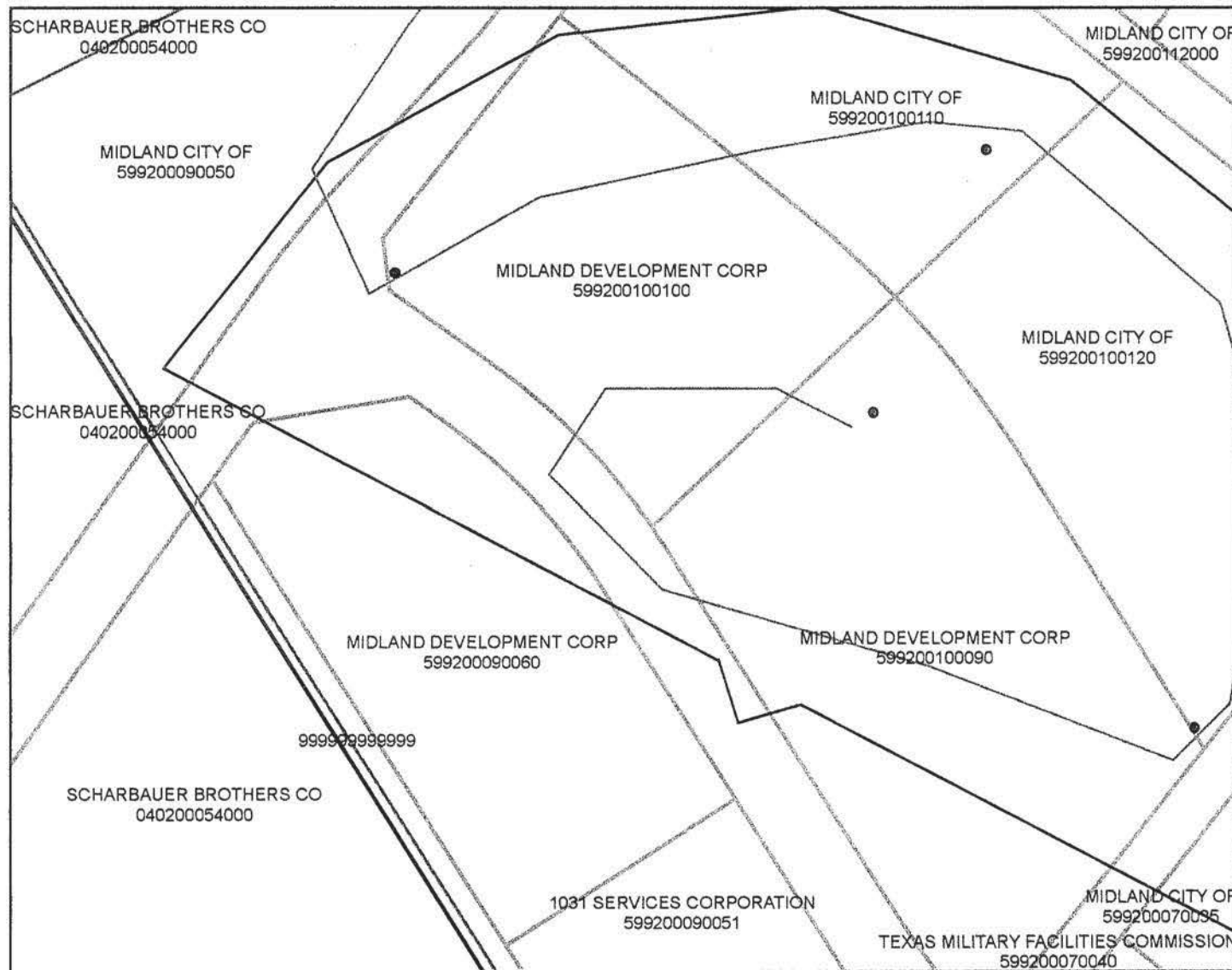
CALL MIKE HATLEY, VP MIDLAND DEV. CORP.

THE UNITED STATES OF AMERICA



By: 
Hyla J. Head
Chief, Real Estate Division
U.S. Army Corps of Engineers
ATTN: CESWF-RE-A
P.O. Box 17300
Fort Worth, Texas 76102-0300
817-886-1096

Owner requires notification prior to entry ☒ Yes ☐ No (please circle one)

Right-of-Entry Request for Formerly Used Defense Site Former Midland AAF K06TX0199



Legend

-  Midland_FUDS_boundaries
-  Midland_Ranges
-  Midland Parcels



**US Army Corps
of Engineers®**

Author: Collin McCormick
Date: 23 July 2007
Source: ESRI StreetMap USA, Midland
County Appraisal District,
U.S. Army Corps of Engineers



0.04 0.02 0 0.04 Miles

The U.S. Army Corps of Engineers has provided these spatial data as a representation of the various geographic information gathered from multiple sources. These data should be viewed only as a representation of the provided information and should not be used for any other purpose. No guarantee is made by the U.S. Army Corps of Engineers regarding the accuracy or completeness of the data or their suitability for a particular use.

DEPARTMENT OF THE ARMY
RIGHT OF ENTRY FOR SITE INSPECTION

MIDLAND ARMY AIR FIELD

DACA63-9-07-0452

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Dated this 15th day of August, 2007

John A Wells
Owner's signature

JOHN A. Wells
Owner's printed name

Owner's mailing address: TMFC
2200 W. 35TH ST, Bldg 64
Austin, TX 78703-1222

Home Telephone: 830/875-2917

Work Telephone: 512/782-6905

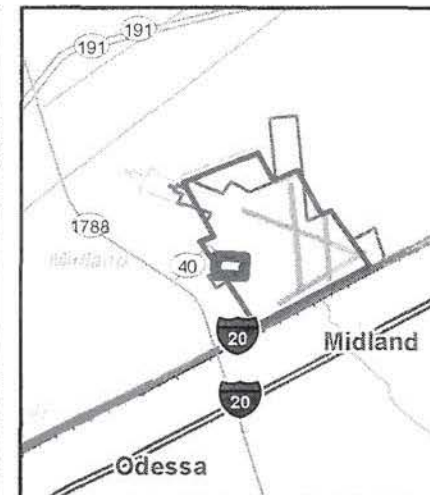
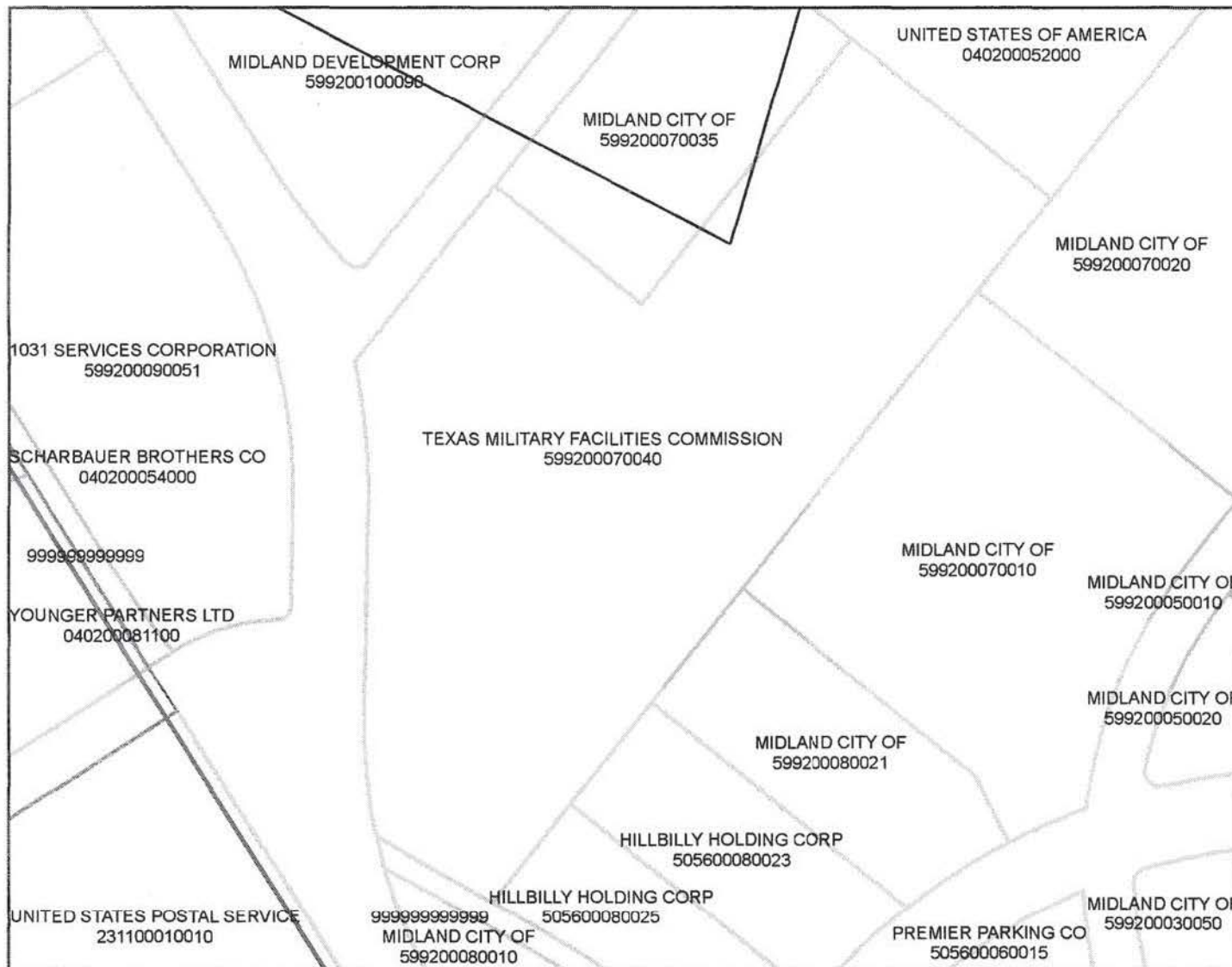
THE UNITED STATES OF AMERICA

By: Hyla J. Head
Hyla J. Head
Chief, Real Estate Division
U.S. Army Corps of Engineers
ATTN: CESWF-RE-A
P.O. Box 17300
Fort Worth, Texas 76102-0300
817-886-1096

Owner requires notification prior to entry. Yes

No (please circle one)

Right-of-Entry Request for Formerly Used Defense Site Former Midland AAF K06TX0199



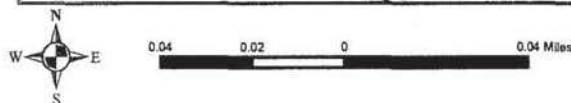
Legend

- Midland_FUDS_boundaries
- Midland_Ranges
- Midland Parcels



**US Army Corps
of Engineers®**

Author: Collin McCormick
Date: 23 July 2007
Source: ESRI StreetMap USA, Midland
County Appraisal District,
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